Access DB# 78570

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Susy Tsang-Foster Examiner #: 76063 Date: 10/23/02
Art Unit: 1745 Phone Number 30 5-0588 Serial Number: 09/689,817
Mail Box and Bldg/Room Location: CP3 8A09 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Molded Electrode, method for production thereof and secondary battery using thereof.

Inventors (please provide full names): Please see attached list

Earliest Priority Filing Date: 10/14/1999

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please see claim 3. The Examiner is not giving weight to the term "molded" in the preamble of claim 3

Please search for an electrode comprising

(a) an electrode material comprising a polymer active material, a conductivity-enhancing agent and a plasticizer and

(b) at least one current collector sheet;

the electrode material and the current collector sheet formed into one piece, and the ~~ratio of the volume~~ of the electrode material and the volume of the current collector sheet being 30:1 to 100:1, provided the volume of the terminal portion of the current collector sheet is excluded from the volume of the current collector sheet. Equivalently, please search for the ratio of the thickness of the electrode material to the thickness of the current collector sheet being 30:1 to 100:1 ~~where~~. Thank you.

STAFF USE ONLY

Searcher: K. Fuller
Searcher Phone #:
Searcher Location:
Date Searcher Picked Up:
Date Completed: 10/29/02
Searcher Prep & Review Time: 20
Clerical Prep Time:
Online Time: 47

Type of Search

NA Sequence (#)
AA Sequence (#)
Structure (#)
Bibliographic ✓
Litigation
Fulltext
Patent Family
Other

Vendors and cost where applicable

STN ✓
Dialog
Questel/Orbit
Dr.Link
Lexis/Nexis
Sequence Systems
WWW/Internet
Other (specify)

PTO-1590 (8-01)

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FILE COVERS 1907 - 29 Oct 2002  VOL 137 ISS 18
FILE LAST UPDATED: 28 Oct 2002  (20021028/ED)

 This file contains CAS Registry Numbers for easy and accurate
 substance identification.

CAS roles have been modified effective December 16, 2001. Please
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=> D QUE L13
L4          7393 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?) AND (ELECTRODE? OR
                 ANODE? OR CATHODE?)
L5            84 SEA FILE=HCAPLUS ABB=ON  L4 AND CURRENT?(2A)COLLECT?
L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6
L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L11            9 SEA FILE=HCAPLUS ABB=ON  L7 AND L9
L12           19 SEA FILE=HCAPLUS ABB=ON  L10 AND (BOND? OR PRESS?)
L13           22 SEA FILE=HCAPLUS ABB=ON  L11 OR L12


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MOST RECENT DERWENT UPDATE:     200269        <200269/DW>
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>>> SLART (Simultaneous Left and Right Truncation) is now
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>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<
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=> D QUE L16
L4 7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)
L5 84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?
L6 257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?)(4A)COLLECT?
L7 21 SEA FILE=HCAPLUS ABB=ON L5 AND L6
L8 1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?)(4A)(ANODE? OR CATHODE? OR ELECTRODE?)
L9 27 SEA FILE=HCAPLUS ABB=ON L5 AND L8
L10 39 SEA FILE=HCAPLUS ABB=ON L7 OR L9
L14 18 SEA FILE=WPIX ABB=ON L10 AND (BOND? OR PRESS?)
L15 4 SEA FILE=WPIX ABB=ON L7 AND L9
L16 21 SEA FILE=WPIX ABB=ON L14 OR L15

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FILE LAST UPDATED: 11 SEP 2002 <20020911/UP>
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=> D QUE L27
L4 7393 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?) AND (ELECTRODE? OR ANODE? OR CATHODE?)
L5 84 SEA FILE=HCAPLUS ABB=ON L4 AND CURRENT?(2A)COLLECT?
L6 257 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?)(4A)COLLECT?
L7 21 SEA FILE=HCAPLUS ABB=ON L5 AND L6
L8 1671 SEA FILE=HCAPLUS ABB=ON (MOLD? OR MOULD?)(4A)(ANODE? OR CATHODE? OR ELECTRODE?)
L9 27 SEA FILE=HCAPLUS ABB=ON L5 AND L8
L10 39 SEA FILE=HCAPLUS ABB=ON L7 OR L9
L14 18 SEA FILE=WPIX ABB=ON L10 AND (BOND? OR PRESS?)
L15 4 SEA FILE=WPIX ABB=ON L7 AND L9
L17 109 SEA FILE=JAPIO ABB=ON L14 OR L15
L19 74 SEA FILE=JAPIO ABB=ON L17 AND H01M004?/IC
L21 7 SEA FILE=JAPIO ABB=ON L19 AND (POLYMER? OR PLASTIC? OR MACROMOL?)
L22 2545 SEA FILE=JAPIO ABB=ON H01M004?/IC AND CURRENT?(2A)COLLECT?
L24 193 SEA FILE=JAPIO ABB=ON L22 AND (BOND? OR PRESS? OR MOLD? OR MOULD?)(3A)(ELECTRODE? OR ANODE? OR CATHODE?)
L25 153 SEA FILE=JAPIO ABB=ON L24 AND BATTER?
L26 18 SEA FILE=JAPIO ABB=ON L25 AND (POLYMER? OR PLASTIC? OR MACROMOL?)
L27 23 SEA FILE=JAPIO ABB=ON L21 OR L26

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L5            84 SEA FILE=HCAPLUS ABB=ON  L4 AND CURRENT?(2A)COLLECT?
L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6
L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L14           18 SEA FILE=WPIX ABB=ON  L10 AND (BOND? OR PRESS?)
L15            4 SEA FILE=WPIX ABB=ON  L7 AND L9
L28            0 SEA FILE=JICST-EPLUS ABB=ON  L14 OR L15


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L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6
L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L14           18 SEA FILE=WPIX ABB=ON  L10 AND (BOND? OR PRESS?)
L15            4 SEA FILE=WPIX ABB=ON  L7 AND L9
L30            1 SEA FILE=NTIS ABB=ON  L14 OR L15


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FILE COVERS 1969 TO DATE.

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L4          7393 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?) AND (ELECTRODE? OR
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L5            84 SEA FILE=HCAPLUS ABB=ON  L4 AND CURRENT?(2A)COLLECT?
L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6
L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L14           18 SEA FILE=WPIX ABB=ON  L10 AND (BOND? OR PRESS?)
L15            4 SEA FILE=WPIX ABB=ON  L7 AND L9
L31            0 SEA FILE=INSPEC ABB=ON  L14 OR L15

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>>> USING THE NEW CLASSIFICATION CODES FOR RETRIEVAL A ROUTINE
    WILL AUTOMATICALLY FIND ALL FORMERLY USED RELEVANT ENERGY-
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=> D QUE L29
L4          7393 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?) AND (ELECTRODE? OR
                 ANODE? OR CATHODE?)
L5            84 SEA FILE=HCAPLUS ABB=ON  L4 AND CURRENT?(2A)COLLECT?
L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6
L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L14           18 SEA FILE=WPIX ABB=ON  L10 AND (BOND? OR PRESS?)
L15            4 SEA FILE=WPIX ABB=ON  L7 AND L9
L29            1 SEA FILE=ENERGY ABB=ON  L14 OR L15

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                 ANODE? OR CATHODE?)
L5            84 SEA FILE=HCAPLUS ABB=ON  L4 AND CURRENT?(2A)COLLECT?
L6           257 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)COLLECT?
L7            21 SEA FILE=HCAPLUS ABB=ON  L5 AND L6

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L8          1671 SEA FILE=HCAPLUS ABB=ON  (MOLD? OR MOULD?)(4A)(ANODE? OR
                 CATHODE? OR ELECTRODE?)
L9            27 SEA FILE=HCAPLUS ABB=ON  L5 AND L8
L10           39 SEA FILE=HCAPLUS ABB=ON  L7 OR L9
L14           18 SEA FILE=WPIX ABB=ON  L10 AND (BOND? OR PRESS?)
L15            4 SEA FILE=WPIX ABB=ON  L7 AND L9
L32            1 SEA FILE=COMPENDEX ABB=ON  L14 OR L15


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PROCESSING COMPLETED FOR L16
PROCESSING COMPLETED FOR L27
PROCESSING COMPLETED FOR L30
PROCESSING COMPLETED FOR L29
PROCESSING COMPLETED FOR L32
L33           67 DUP REM L13 L16 L27 L30 L29 L32 (2 DUPLICATES REMOVED)

=> D L33 ALL 1-67

L33  ANSWER 1 OF 67  HCAPLUS  COPYRIGHT 2002 ACS
AN   2002:368792  HCAPLUS
DN   136:378574
TI   Method of manufacturing a electric double layer supercapacitor with
     electrode of carbon particle layer
IN   Maletin, Yurii A.; Strizhakova, Natalie G.; Izotov, Vladimiz Y.; Mironova,
     Antonia A.; Kozachkov, Sergey G.; Danilin, Valery A.; Podmogilny, Sergey
     N.; Arulepp, Mati; Aleksandrovna, Kukusjkina Julia; Efimovitj, Kravtjik
     Aleksandr; Vasilevitj, Sokolov Vasilij; Perkson, Anti; Leis, Jaan; Zheng,
     Jie; Konstantinovich, Gordeev Sergey; Kolotilova, Julia Y.; Cederstroem,
     Jan; Wallace, Clarence L.
PA   Ultratec Ltd., UK
SO   PCT Int. Appl., 48 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
IC   ICM  H01G009-00
```

CC 76-10 (Electric Phenomena)
Section cross-reference(s): 35

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002039468	A2	20020516	WO 2001-EP12837	20011106
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	AU 2002014042	A5	20020521	AU 2002-14042	20011106
	US 2002097549	A1	20020725	US 2001-986569	20011109
PRAI	US 2000-247593P	P	20001109		
	RU 2001-117550	A	20010615		
	WO 2001-EP12837	W	20011106		

AB The present invention relates to an elec. double layer capacitor including .gtoreq.1 pair of polarizable **electrodes** connected to **current collectors**, a separator made of ion-permeable but electron-insulating material interposed between the **electrodes** in each pair of **electrodes**, and a liq. electrolyte. According to the invention the **electrodes** include a layer of C particles having a narrow distribution of nanopores therein, the pore sizes of the nanopores being adapted to fit the ion sizes of the electrolyte.

ST elec double layer carbon particle supercapacitor manuf

IT Fluoropolymers, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(binder made of; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Particles
(carbon; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Welding of metals
(diffusion, **electrode** sheet and conductive foil attachment; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Mixing
(dry, wet, muller; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Binders
Capacitor **electrodes**
Electrolytes
Filaments
Halogenation
Thermal decomposition
(elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Welding of metals
(laser, **electrode** sheet and conductive foil attachment; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Polyesters, processes

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(nuclear membrane; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT **Molding**
(**press, electrode** sheet and conductive foil attachment; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Dielectric films
(separator, porous; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT Paper
(separator; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 68-12-2, Dimethylformamide, uses 75-05-8, Acetonitrile, uses 78-93-3, Methyl ethyl ketone, uses 96-48-0, .gamma.-Butyrolactone 96-49-1, Ethylene carbonate 100-47-0, Benzonitrile, uses 107-12-0, Propionitrile 108-29-2, .gamma.-Valerolactone 108-32-7, Propylene carbonate 109-74-0, Butyronitrile 109-99-9, Tetrahydrofuran, uses 110-67-8, 3-Methoxypropionitrile 110-71-4 872-50-4, N-Methyl pyrrolidone, uses
RL: DEV (Device component use); NUU (Other use, unclassified); USES (Uses)
(aprotic polar solvent; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 9002-84-0 24937-79-9, Polyvinylidene fluoride
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(binder made of; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 124-38-9, Carbon dioxide, processes 7647-01-0, Hydrogen chloride, processes 7664-93-9, Sulfuric acid, processes 7681-52-9, Sodium hypochlorite 7697-37-2, Nitric acid, processes 7732-18-5, Water, processes
RL: CPS (Chemical process); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(in for remaining carbon particles oxidn.; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 7631-86-9, Silica, processes
RL: DEV (Device component use); MOA (Modifier or additive use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(included in **electrode**; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 14874-70-5D, Tetrafluoroborate, N,N-dialkyl-1,4-diazabicyclo[2.2.2]octanediium salts 14874-70-5D, Tetrafluoroborate, tetraalkylammonium salts 14874-70-5D, Tetrafluoroborate, tetrakis(dialkylamino) phosphonium salts 16919-18-9D, Hexafluorophosphate, N,N-dialkyl-1,4-diazabicyclo[2.2.2]octanediium salts 16919-18-9D, Hexafluorophosphate, tetraalkylammonium salts 16919-18-9D, Hexafluorophosphate, tetrakis(dialkylamino) phosphonium salts
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material

use); PROC (Process); USES (Uses)
(liq. electrolyte made of; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 9003-07-0, Polypropylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(nonwoven, separator; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 25038-59-9, Polyethylene terephthalate, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(nuclear membrane; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 7440-44-0, Carbon, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(particles; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 110320-40-6, Polypropylene carbonate
RL: DEV (Device component use); NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(secondary binder; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 9002-88-4, Polyethylene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(separator film; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 9004-34-6, Cellulose, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(separator paper; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

IT 7782-42-5, Graphite, processes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(thermo-expanded graphite in capacitor **electrode**; elec. double layer supercapacitor with **electrode** of carbon particle layer and a method of manufg. such a supercapacitor)

L33 ANSWER 2 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:290706 HCAPLUS
DN 136:312576
TI Method for preparing **electrodes** for Ni/metal hydride secondary batteries using copper
IN Lee, Jai Young; Jang, Kuk Jin; Kim, Dong Myung; Yu, Ji Sang; Lee, Sang Min; Lee, Ho

PA Korea Advanced Institute of Science and Technology, S. Korea
SO U.S., 17 pp.
CODEN: USXXAM
DT Patent
LA English
IC ICM H01M004-66
ICS H01M004-58
NCL 429218200
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6372383	B1	20020416	US 2000-494596	20000131

AB Disclosed is a method for prepg. a high performance, neg. **electrode** for Ni/metal hydride cells. A Zr-based hydrogen storage alloy, a binder comprising a mixt. of polytetrafluoroethylene and a thickening agent (hydroxypropylmethyl cellulose), and a **current collector** comprising carbon black and copper are slurried and **molded** into a paste-type **electrode**. In a closed type cell, the copper repetitively undergoes melting and deposition on the **electrode** during charging and discharging cycles, allowing the **electrode** to show a similar change in surface morphol. and electrochem. properties to that of a conventionally electroless plated **electrode**. Giving a contribution to the improvement in cell properties, including inner cell **pressure**, high rate dischargeability and energy d. per vol., the method can substitute conventional alloy surface modifying methods, such as electroless plating methods and other pre-treatment processes necessary for the prepn. of **electrodes**, which are difficult to practice owing to the prodn. of pollution of the environment and to requirement of addnl. procedures.

ST battery nickel metal hydride **electrode** prepn; **anode** prepn nickel metal hydride battery; copper use **anode** prepn nickel metal hydride battery

IT Acrylic polymers, uses
Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(binder; method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

IT Battery **anodes**
Secondary batteries
(method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

IT Carbon black, uses
RL: DEV (Device component use); USES (Uses)
(method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

IT 9002-84-0, Ptfe
RL: MOA (Modifier or additive use); USES (Uses)
(binder; method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

IT 7440-50-8, Copper, uses 212510-16-2
RL: DEV (Device component use); USES (Uses)
(method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

IT 9004-65-3, Hydroxypropyl methyl cellulose
RL: TEM (Technical or engineered material use); USES (Uses)
(method for prepg. **electrodes** for Ni/metal hydride secondary batteries using copper)

RE.CNT 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE
(1) Humphrey; US 5922493 A 1999 HCAPLUS
(2) Komada; US 5932369 A 1999 HCAPLUS
(3) Lee, J; Department of Materials Science and Engineering 1995, P144
(4) Ogura; US 6171727 B1 2001 HCAPLUS
(5) Sakai, T; Journal of Less-Common Metals 1991, V172-174, P1175
(6) Sawa; US 6030724 A 2000 HCAPLUS
(7) Sawa, H; Materials Transaction, JIM 1990, V31(6), P487 HCAPLUS
(8) Yamano; US 4636445 A 1987 HCAPLUS

L33 ANSWER 3 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 2002:695569 HCAPLUS
DN 137:219565
TI The filling of a fuel cell **anode current collector** with a reforming catalyst
IN Hoffmann, Joachim
PA MTU Friedrichshafen G.m.b.H., Germany
SO Ger., 6 pp.
CODEN: GWXXAW
DT Patent
LA German
IC ICM H01M008-02
ICS H01M008-06
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10063546	C1	20020912	DE 2000-10063546	20001220

AB The reforming catalyst is present in voids inside the **anode current collector**. A neg. **mold** which corresponds to the shape of the **anode current collector**, with its voids, is made from a materialthat can be thermally decompd. The voids of the neg. **mold** are filled with the reforming catalyst and the **mold** is inserted into the **anode current collector**. The **mold** is then burnt out.
ST fuel cell **anode current collector** reforming catalyst **mold**
IT Fuel cell **electrodes**
(catalytic; filling of a fuel cell **anode current collector** with a reforming catalyst)
IT **Molds** (forms)
Reforming catalysts
Thermal decomposition
Voids (structures)
(filling of a fuel cell **anode current collector** with a reforming catalyst)
RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
(1) Anon; JP 02195654 A HCAPLUS
(2) Anon; JP 06196184 A
(3) Anon; JP 08236129 A HCAPLUS
(4) Anon; JP 10092447 A HCAPLUS
(5) Anon; US 5348814 A HCAPLUS
(6) Anon; US 5660941 A HCAPLUS

L33 ANSWER 4 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 2002-541836 [58] WPIX
DNN N2002-429218 DNC C2002-153942
TI A carbonaceous material has bore distribution, a low specific surface

area, a polarization **electrode** for an electric double layer capacitor and the electric double layer capacitor.
DC A85 L03 V01
IN HASHIMOTO, Z; MINAMIRU, S; MITSUHASHI, H; SATO, T; SHIMIZU, T; YOSHIDA, H
PA (ITOC-N) ITOCHU CORP; (NISN) NISSHINBO IND INC; (NISN) NISSHIN SPINNING CO LTD; (ITOT-N) ITO TADASHI SHOJI KK; (HASH-I) HASHIMOTO Z; (MINA-I) MINAMIRU S; (MITS-I) MITSUHASHI H; (SATO-I) SATO T; (SHIM-I) SHIMIZU T; (YOSH-I) YOSHIDA H
CYC 5
PI JP 2002128514 A 20020509 (200258)* 24p C01B031-08
CA 2358776 A1 20020416 (200258) EN H01G009-058
CN 1349234 A 20020515 (200260) H01G009-042
US 2002126439 A1 20020912 (200262) H01G009-00
KR 2002030030 A 20020422 (200269) H01G009-058
ADT JP 2002128514 A JP 2000-315563 20001016; CA 2358776 A1 CA 2001-2358776 20011015; CN 1349234 A CN 2001-135791 20011016; US 2002126439 A1 US 2001-977361 20011016; KR 2002030030 A KR 2001-63675 20011016
PRAI JP 2000-315563 20001016
IC ICM C01B031-08; H01G009-00; H01G009-042; H01G009-058
ICS C09D005-00; C09D007-12; C09D101-00; C09D103-00; C09D127-12; C09D129-04; C09D175-04; C09D201-00; D01F009-145; H01G009-038; H01G009-155; H01M010-40
AB JP2002128514 A UPAB: 20020910
NOVELTY - In a bore distribution obtained from nitrogen-adsorbing isothermal line, a carbonaceous material has a bore volume having a bore radium of 10 angstroms or less of 70% or less of the entire bore volume.
USE - The carbonaceous material is used for the polarization **electrode** for use in the electric double layer capacitor.
ADVANTAGE - The nonaqueous electrolytic solution is penetrated into the interior of the carbonaceous material. An ion molecule is adsorbed to the surface of the carbonaceous material. The carbonaceous material has the bore distribution and a low specific surface area suitable for forming the electric double layer capacitor. The electric double layer capacitor has high voltage, high energy density, high capacity, and long repeated life. A small type is available for the electric double layer capacitor.
Dwg.0/4
FS CPI EPI
FA AB
MC CPI: A12-E07B; L03-B03
EPI: V01-B01A; V01-B01B; V01-B01D

L33 ANSWER 5 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 2001:414771 HCAPLUS
DN 135:21926
TI Lithium manganese oxide **cathode** active mass and its manufacture for secondary nonaqueous-electrolyte lithium battery
IN Nakashima, Motoe; Tanaka, Muneyuki; Uchikawa, Akio
PA Hitachi Metals, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M004-58
ICS H01M004-02; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001155728	A2	20010608	JP 1999-332427	19991124

AB The **cathode** active mass is spinel Li-Mn oxide powder comprising (1) primary particles with particle size distribution 1-20 .mu.m and the ratio of the max. particle size to the min. particle size .gtoreq.3.0 and (2) secondary particles which are agglomeration of the primary particles. Battery **cathode**, which is obtained by applying the active mass on a **current collector** and **pressure molding**, has **cathode** d. .gtoreq.2.5 g/cm3. The active mass is manufd. by firing a mixt. of Mn oxide and Li salt (Li carbonate, etc.) at 1000-1100.degree. in the atm. and firing again at 600.+-.100.degree.. The battery using the active mass has high discharge capacity and shows good cycling performance.

ST spinel lithium manganese oxide **cathode** battery

IT Battery **cathodes**
Firing (heat treating)
(manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step firing of raw material for Li battery)

IT 39457-42-6P, Lithium manganese oxide
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step firing of raw material for Li battery)

IT 554-13-2, Lithium carbonate 1313-13-9, Manganese dioxide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(manuf. of spinel Li-Mn oxide **cathode** active mass by 2-step firing of raw material for Li battery)

L33 ANSWER 6 OF 67 HCAPLUS COPYRIGHT 2002 ACS

applicant

AN 2001:299243 HCAPLUS

DN 134:329044

TI Battery **electrode molds**, their preparation, and secondary batteries using same **electrode molds**

IN Fujiwara, Masaki; Nakagawa, Yuji; Kurosaki, Masato; Kaneko, Shinako; Harada, Manabu; Nishiyama, Toshihiko

PA NEC Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM H01M004-02
ICS H01M004-04; H01M010-40

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2001118565	A2	20010427	JP 1999-292537	19991014
	GB 2355579	A1	20010425	GB 2000-25172	20001013
PRAI	JP 1999-292537	A	19991014		

AB Battery **electrode molds** comprise (A) one sheet of **current collectors**, and (B) 300 .mu.m-9 mm thickness of **electrode** materials contg. macromol. active mass, auxiliary elec. conductive agents, and plasticizers, formed at least on one side of the **current collectors**. Alternatively, multiple sheets of the **current collectors** (spaced from one another by a prescribed distance) are arranged instead. The vol. ratio of the **electrode** materials and the **current collectors** may be 30-100:1. The **electrode molds** are prepd. by thermally **pressing** the elements. Secondary batteries using the **electrode molds** as **anodes** and/or **cathodes** are also claimed. Since the **electrode**

molds are free from binders, the batteries can achieve high adhesion and low elec. resistivity between the **current collectors** and the **electrodes**, and high energy d.

ST battery macromol **electrode bonding current collector**; polymer **electrode** battery **bonding current collector**

IT Electric conductors
(**current collectors**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT Sulfonic acids, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polycyanoindole doped with, **electrode** active mass; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT Battery **electrodes**
(secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT 7440-02-0, Nickel, uses 7440-25-7, Tantalum, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**current collectors**; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT 51109-40-1
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**electrode** active mass; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT 25233-30-1P, Polyaniline
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process); USES (Uses)
(p-toluenesulfonate-doped, **electrode** active mass; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT 104-15-4, p-Toluenesulfonic acid, uses
RL: MOA (Modifier or additive use); USES (Uses)
(polyaniline doped with, **electrode** active mass; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

IT 91201-84-2, 5-Cyanoindole homopolymer
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(sulfate-doped, **electrode** active mass; secondary batteries using macromol. **mold electrodes** thermally **pressed** and **bonded** with **current collectors**)

L33 ANSWER 7 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 2001-300246 [31] WPIX
DNN N2001-215456 DNC C2001-092181
TI Seamless **cathode** tube by applying **cathode** coating mixture to **current collector** tube.
DC A85 L03 X16

IN CHI, I; CINTRA, G; SEARLE, G
PA (GILL) GILLETTE CO
CYC 95
PI WO 2001028014 A1 20010419 (200131)* EN 19p H01M004-88
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
AU 2000080137 A 20010423 (200147) H01M004-88
EP 1230698 A1 20020814 (200261) EN H01M004-88
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI
ADT WO 2001028014 A1 WO 2000-US28168 20001012; AU 2000080137 A AU 2000-80137 20001012; EP 1230698 A1 EP 2000-970812 20001012, WO 2000-US28168 20001012
FDT AU 2000080137 A Based on WO 200128014; EP 1230698 A1 Based on WO 200128014
PRAI US 1999-416799 19991013
IC ICM H01M004-88
ICS H01M012-06
AB WO 200128014 A UPAB: 20010607
NOVELTY - The tube is formed by placing **current collector** tube in a **molding** cavity (24) and injecting **cathode** coating mixture from the hopper (10) into the cavity. When the mixture stiffens it forms a seamless **cathode** tube. The **current collector** tube screen tube is wrapped in a microporous membrane prior to its placing into the injection cavity. The mixture can be applied by ram or screw extrusion or injection **molding**
USE - In electrochemical cells.
DESCRIPTION OF DRAWING(S) - The drawing shows an injection **molding** system for seamless **cathode** tubes.
hopper 10
molding cavity 24
Dwg.4A/4
FS CPI EPI
FA AB; GI
MC CPI: A11-B05B2; A11-B12A; A12-E11A; L03-C03; L03-E
EPI: X16-A01B; X16-D; X16-E06

L33 ANSWER 8 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 2002-358951 [39] WPIX
DNC C2002-101858
TI Process for producing **electrode** plate of lithium secondary battery.
DC A85 L03 X16
IN JANG, Y C
PA (SMSU) SAMSUNG SDI CO LTD
CYC 1
PI KR 2001107374 A 20011207 (200239)* 1p H01M004-04
ADT KR 2001107374 A KR 2000-28851 20000527
PRAI KR 2000-28851 20000527
IC ICM H01M004-04
AB KR2001107374 A UPAB: 20020621
NOVELTY - Provided is a process for producing an **electrode** plate of a lithium secondary battery, which makes the contact area of an electrolyte and the **electrode** maximize, therefore, the efficiency and the capacity of the battery can be increased.
DETAILED DESCRIPTION - The process comprises the steps of: mixing a powdered **anode** active material(21) such as a lithium composite

oxide or a powdered **cathode** active material(21) such as carbon, a powdered conductive agent(22) such as a carbon black, and a powdered binder(23) such as polyvinylidene fluoride in a mixer(25), wherein the binder(23) has 5-50% smaller particle size than the active material powder; injecting the mixture(24) with a **current collector** into a **mold**(28) and then heat-**pressing** to agglutinate the mixture(24) on the **current collector**

.

Dwg.1/10

FS CPI EPI
FA AB; GI
MC CPI: A99-A; L03-E01B5
EPI: X16-B01F1; X16-E01E; X16-E02

L33 ANSWER 9 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 2001-377060 [40] WPIX
DNN N2001-276002 DNC C2001-115424
TI **Molded electrode** for use in secondary battery comprises **electrode** material with polymer active material, conductivity-enhancer and plasticizer, **molded** in one piece with **current collector** sheet.

applicants

DC A32 A85 L03 X16
IN FUJIWARA, M; HARADA, G; KANEKO, S; KUROSAKI, M; NAKAGAWA, Y; NISHIYAMA, T
PA (NIDE) NEC CORP
CYC 2
PI GB 2355579 A 20010425 (200140)* 64p H01M010-40
JP 2001118565 A 20010427 (200141) 15p H01M004-02
ADT GB 2355579 A GB 2000-25172 20001013; JP 2001118565 A JP 1999-292537 19991014
PRAI JP 1999-292537 19991014
IC ICM H01M004-02; H01M010-40
ICS H01M004-04
AB GB 2355579 A UPAB: 20010719
NOVELTY - **Molded electrode** comprises an **electrode** material (2) and at least one **current collector** sheet (3). The **electrode** material includes a polymer active material, a conductivity-enhancing agent and a plasticizer, and is **molded** or formed into one piece with the collector sheet.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

(1) A process of forming a **molded electrode** by hot-**pressing**; and

(2) A secondary battery which uses the **molded electrode** as the positive and/or negative **electrode**.

USE - As an **electrode** using a polymer active material in a secondary battery.

ADVANTAGE - The use of hot-**pressing** avoids solvent application, during which the solvent evaporates and often generates cracks in the film. The method also enables a thick film to be formed. The energy density of the battery is enhanced relative to previous devices, since the ratio of active material to **current collector** volume is increased. The plasticizer is chosen to minimize electrical resistance and so maximize power density. Since the **electrode** is not limited to a sheet-type, there is greater scope in battery design.

DESCRIPTION OF DRAWING(S) - The drawing shows a sectional view of a **molded electrode**.

Electrode material 2
Current collector sheet 3
Terminal 4
Dwg.1/6

FS CPI EPI

FA AB; GI
MC CPI: A08-M09A; A08-P01; A09-A03; A11-B01; A12-E06A; L03-E01B
EPI: X16-E08A

L33 ANSWER 10 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:688985 HCAPLUS
DN 131:306129
TI Electric double-layer capacitor and its manufacture
IN Shibutani, Takashi; Hiratsuka, Kazuya
PA Asahi Glass Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01G009-058
ICS H01G009-016
CC 76-10 (Electric Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 11297579	A2	19991029	JP 1998-99613	19980410

AB The manufg. method involves the following steps: (1) **molding** a C-based **electrode** into a sheet shape, (2) **bonding** the **electrode** sheet on a **current collector** via a conductive adhesive contg. elec. conductive powder, an epoxy resin, a hardening agent, and a solvent with b.p. .ltoreq.160.degree., and (3) heating at .gtoreq.150.degree. for hardening and drying the adhesive. Also claimed is the obtained capacitor with good charge/discharge performance for a long period.
ST elec double layer capacitor **electrode** adhesive; epoxy resin conductive adhesive **electrode** capacitor
IT Carbon black, uses
Epoxy resins, uses
RL: DEV (Device component use); USES (Uses)
(**bonding** of **electrode** to **current collector** via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)
IT Adhesives
(conductive; **bonding** of **electrode** to **current collector** via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)
IT Capacitors
(double layer; **bonding** of **electrode** to **current collector** via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)
IT 26402-42-6, Epikote 827-diethylenetriamine copolymer 247139-67-9, Epikote 154-diethylenetriamine copolymer
RL: DEV (Device component use); USES (Uses)
(**bonding** of **electrode** to **current collector** via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)
IT 39152-24-4 73310-55-1 110839-13-9
RL: DEV (Device component use); USES (Uses)
(hardening agent; **bonding** of **electrode** to **current collector** via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)
IT 78-93-3, Methylethylketone, uses 108-10-1, Methyl isobutyl ketone 108-38-3, m-Xylene, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvent in adhesive; **bonding** of **electrode** to

current collector via conductive adhesive contg. epoxy in manuf. of elec. double-layer capacitor)

L33 ANSWER 11 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1999:427148 HCAPLUS
DN 131:90188
TI Manufacture of flat sheet **electrode** for secondary battery
IN Ebine, Yoshiaki
PA Toyota Central Research and Development Laboratories, Inc., Japan
SO Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M004-04
ICS H01M004-02; H01M004-64; H01M010-38; H01M010-40
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 11185736	A2	19990709	JP 1997-364156	19971216

AB The title **electrode** is manufd. by the following steps: (1) forming active mass layers on both sides of a metal foil **current collector**, (2) **pressure-molding** the resulting **current collector** sheet, and (3) heating the sheet while applying tension. The obtained sheet **electrode** has uniform distortion distribution and is esp. useful as a **cathode** sheet for secondary Li battery.
ST sheet **electrode** uniform distortion battery; **cathode** sheet manuf lithium battery
IT Battery **electrodes**
Heat treatment
(**press molding** of metal sheet and heating while applying tension in manuf. of flat sheet **electrode** for battery)
IT **Molding**
(**press**; **press molding** of metal sheet and heating while applying tension in manuf. of flat sheet **electrode** for battery)
IT 7429-90-5, Aluminum, processes 7440-50-8, Copper, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**current collector**; **press molding** of metal sheet and heating while applying tension in manuf. of flat sheet **electrode** for battery)
IT 39457-42-6, Lithium manganese oxide
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(**press molding** of metal sheet and heating while applying tension in manuf. of flat sheet **electrode** for battery)

L33 ANSWER 12 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1999-283615 JAPIO
TI MANUFACTURE OF ELECTRODE FOR NONAQUEOUS ELECTROLYTE **BATTERY**
IN NAKAZATO DAISUKE; MIYAKI YOUSUKE; MARO HITOSHI
PA TDK CORP
PI JP 11283615 A 19991015 Heisei
AI JP 1998-100002 (JP10100002 Heisei) 19980326
PRAI JP 1998-100002 19980326
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
IC ICM **H01M004-04**
ICS **H01M004-62**; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a method for industrially preparing an electrode for a nonaqueous electrolyte **battery** with ease in which flexibility of the electrode can be kept and peeling deficiency of an electrode coating film can be eliminated.
SOLUTION: Electrode active material and a high **polymeric** material, which substantially does not have a melting point at temperatures of 300°C or lower, are mixed to prepare an electrode coating. The resultant electrode coating is applied onto an electrode **current collector**. The electrode having the resultant coating film formed thereon is dried, followed by heat treatment at temperatures of 300°C or lower for shorter than 30 hours before or after compression **molding**, thus preparing an **electrode** for a nonaqueous electrolyte **battery**. It is preferable that the temperature for the heat treatment should range from 100°C to 300°C and the time therefor should be from 30 minutes to 24 hours.
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L33 ANSWER 13 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1999-219707 JAPIO
TI NONAQUEOUS ELECTROLYTE SECONDARY **BATTERY**
IN INOUE YOSHITO
PA SONY CORP
PI JP 11219707 A 19990810 Heisei
AI JP 1998-19966 (JP10019966 Heisei) 19980130
PRAI JP 1998-19966 19980130
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
IC ICM **H01M004-62**
ICS **H01M004-02**; **H01M004-58**; H01M010-40
AB PROBLEM TO BE SOLVED: To provide a **battery** with a good discharging characteristic by forming the **battery** with a positive electrode having a positive electrode mix containing LiMn<SB>2</SB>O<SB>4</SB> and a conductive material, a negative electrode and a nonaqueous electrolyte containing alkaline metal ions, and using the carbon black having the specific iodine adsorption and dibutyl phthalate oil absorption for the conductive material of the positive electrode.
SOLUTION: The carbon black having the iodine adsorption of 42 mg/g or below and the dibutyl phthalate oil absorption of 110 ml/100 g or above is used for the conductive material of a positive electrode. The carbon black is 2 wt.% or above of the whole positive electrode mix. Thermal decomposition carbons, coke graphites, glassy carbons, an organic **polymer** compound baked body, carbon fibers or activated carbon can be used for a carbon material. When the carbon material is used for a negative electrode material, a negative electrode mix mixed with the negative electrode material to a binder and a solvent is **molded** into an **electrode** shape, or the negative electrode mix is applied to a **current collector** and dried to manufacture a negative electrode.
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L33 ANSWER 14 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1999-213969 JAPIO
TI FLEXIBLE THIN **BATTERY**
IN KAGAWA HIROSHI
PA YUASA CORP
PI JP 11213969 A 19990806 Heisei
AI JP 1998-16274 (JP10016274 Heisei) 19980129
PRAI JP 1998-16274 19980129
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
IC ICM H01M002-08
ICS **H01M004-64**; **H01M004-66**; H01M006-18; H01M010-40

AB PROBLEM TO BE SOLVED: To provide a flexible thin **battery** having high resistance to bending and twisting, high **battery** performance, high storage performance, high safety, and high handling capability.
SOLUTION: A flexible thin **battery** has a negative electrode prepared by arranging a negative active material 2 on a metal foil face serving as a negative electrode **current collector** 1 an covering it with a separator 3 made of a **polymer** solid electrolyte, a positive electrode prepared by arranging a positive active material 6 on a metal foil face serving as a positive electrode **current collector** 5, and a window frame-shaped adhesive 4, and the bonded part of the positive **electrode** periphery **bonded** with the adhesive 4 and the bonded part of the negative **electrode** periphery **bonded** with the adhesive 4 are arranged so as no to face each other.

L33 ANSWER 15 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1999-120996 JAPIO
TI MANUFACTURE OF **ELECTRODE**
IN HASHISAKA KAZUHIKO; ADACHI MASAYA; OKA TETSUO
PA TORAY IND INC
PI JP 11120996 A 19990430 Heisei
AI JP 1997-285054 (JP09285054 Heisei) 19971017
PRAI JP 1997-285054 19971017
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
IC ICM **H01M004-04**
ICS **H01M004-58**
AB PROBLEM TO BE SOLVED: To improve the charge and discharge cycle characteristic while keeping a **battery** capacity by setting the thermal treatment temperature of an **electrode** to the melting point of a binder or higher, and using a lithium composite oxide as **electrode** active material.
SOLUTION: In order to prevent the reduction in **battery** capacity by the increase in **electrode** thickness, a thermal treatment is performed prior to the **pressure molding** of the **electrode**. The thermal treatment temperature is set to a temperature higher than the melting point of a binder having satisfactory flowing property, or a temperature higher than the melting point by 20-50°C in order to provide satisfactory charge and discharge cycle characteristic by uniformly fitting the binder to an **electrode** active material, a conductive material and a **current collector**. As the positive **electrode** active material, a lithium composite oxide is used, and a transition metal oxide containing an alkali metal, an inorganic compound such as transition metal chalcogen, a conjugate **polymer** such as polyacetylene or polyparaphenylene, a crosslinked **polymer** having a disulfide **bond**, thionyl chloride or the like is used.

L33 ANSWER 16 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1999-111266 JAPIO
TI HIGH **POLYMER** ELECTROLYTE SECONDARY **BATTERY**
IN IGUCHI TAKAAKI; KUWANA KOJI
PA YUASA CORP
PI JP 11111266 A 19990423 Heisei
AI JP 1997-266940 (JP09266940 Heisei) 19970930
PRAI JP 1997-266940 19970930
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1999
IC ICM **H01M004-02**

ICS **H01M004-58**; H01M010-40

AB PROBLEM TO BE SOLVED: To enhance ion conductivity, and improve a high rate characteristic by using a composite particle on which a specific surface area is covered with an inorganic solid electrolyte particle on which a reversibly lithium storable/releasable active material particle has lithium ion conductivity, as a positive electrode.
SOLUTION: In a positive electrode 2, the positive electrode is formed by hardening a high **polymer** electrolyte monomer by evaporating an organic solvent after coating a surface of a positive electrode **current collecting** body 1 by forming it in a slurry shape by adding an electrolyte monomer to a material by mixing a conductive agent and a composite particle on which 5 to 85% of the whole surface of an active material particle is covered with an inorganic solid electrolyte particle by heating/melting lithium cobalt composite oxide as an active material particle and a glass inorganic solid electrolyte as an inorganic solid electrolyte particle. In a negative electrode 4, the negative **electrode** is formed by **press**-fitting lithium foil to a surface of a negative electrode **current collecting** body 3. After a separator 5 is arranged/laminated between the positive electrode and the negative electrode, it is wrapped/fused by an aluminium laminate 6, and a high **polymer** electrolyte secondary **battery** is obtained.
COPYRIGHT: (C)1999,JPO

L33 ANSWER 17 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1998:115572 HCAPLUS
DN 128:169786
TI Method and apparatus for fuel cell collector manufacture
IN Mizuno, Seiji
PA Toyota Motor Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M008-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10040937	A2	19980213	JP 1996-209228	19960718

AB **Current collectors** for fuel cells are prepd. by **press molding collector** materials under reduced **pressure**, and optionally a 2nd **press molding** in another **mold**. The app. includes a **mold** contg. a **pressing** means and a means for reducing **pressure** in the **mold** during **pressing**. The collector material is preferably graphite.
ST fuel cell graphite **current collector** manuf
IT Fuel cell **electrodes**
(method and app. for manuf. of graphite **current collectors** by **pressing** under reduced **pressure** for fuel cells)
IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(method and app. for manuf. of graphite **current collectors** by **pressing** under reduced **pressure** for fuel cells)

L33 ANSWER 18 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1998-302799 JAPIO
TI BINDER FOR NONAQUEOUS **BATTERY** ELECTRODE
IN NORITAKE YOSHIKA; ITO NOBUYUKI
PA JSR CORP
PI JP 10302799 A 19981113 Heisei
AI JP 1997-121444 (JP09121444 Heisei) 19970425
PRAI JP 1997-121444 19970425
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
IC ICM **H01M004-62**
ICS C08L027-16
AB PROBLEM TO BE SOLVED: To provide a nonaqueous **battery** electrode binder capable of maintaining good conductivity of an electrode active material, forming a nonaqueous **battery electrode** excellent in **bonding** of the **electrode** active material to a **current collecting** material and electrolyte-resistance, especially excellent in output characteristic after multicycle of charge and discharge and a long-term storage, by using the aqueous dispersant of a vinylidene fluoride copolymer containing a functional group.
SOLUTION: A vinylidene fluoride copolymer containing a functional group has a vinylidene fluoride unit as an essential constitutional unit, and is composed of a **polymer** containing a functional group. As the functional group, a carboxyl group, amide group and epoxy group is preferably used. Toluene-insoluble matter in the vinylidene fluoride-based **polymer** containing a functional group, is normally 20 to 100 wt.%, and preferably 30 to 74 wt.%. When the toluene-insoluble matter is less than 20 wt.%, a **polymer** flow occurs in a drying process after coating, and an electrode active material is excessively coated to inhibit the conductivity of an electrode, thereby causing possibility of an overvoltage cause.

L33 ANSWER 19 OF 67 JAPIO
AN 1998-214641 JAPIO
TI RECHARGEABLE LITHIUM ANODE FOR **POLYMER** ELECTROLYTE STORAGE **BATTERY**
IN GAUTHIER MICHEL; BELANGER ANDRE; VALLEE ALAIN
PA HYDRO QUEBEC
PI JP 10214641 A 19980811 Heisei
AI JP 1997-322916 (JP09322916 Heisei) 19971125
PRAI CA 1996-2191019 19961122
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1998
IC ICM H01M010-40
ICS **H01M004-02; H01M004-40**
AB PROBLEM TO BE SOLVED: To provide a storage **battery** in which the number of cycles obtained in a standard life of the storage **battery** can be substantially increased.
SOLUTION: A rechargeable **battery** is composed of an anode which is made of alkaline metal or malleable alkali metal alloy, one kind or more of **polymer** electrolytes which are alkaline cation conductive and act as a separator, one or more of cathode which are reversible against alkali metal cations, and a **current collector**. Therein, the anode is a thin metal sheet of less than 100 micrometers provided with a passive state film of solid-electrolyte boundary face on the surface thereof which limits reaction between the metal and the **polymer** electrolyte and also can replace lithium ions during a continuous charge and discharge cycle. The **polymer** electrolyte constitutes a mechanical deformation-resistant uniform separator, transfers **pressure** to the **anode**, and produces deformation at a rate of less than 35% of its thickness so as to

resist dendritic stress deformation of the metal of the anode. The separator confines the anode sheet in a predetermined position, and maintains the coupling of the boundary face of the electrolyte during a continuous solution-adhesion cycle.

L33 ANSWER 20 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1997-506268 [47] WPIX
DNN N1997-421694 DNC C1997-161191
TI **Electrode** for accumulator - has metal base adhered to porous metallic layer contg. active material in pores..
DC L03 X16
PA (HITB) HITACHI CHEM CO LTD; (HITA) HITACHI LTD
CYC 1
PI JP 09161806 A 19970620 (199747)* 9p H01M004-70
ADT JP 09161806 A JP 1995-324590 19951213
PRAI JP 1995-324590 19951213
IC ICM H01M004-70
ICS H01M004-02; H01M004-58; H01M004-66; H01M004-80; H01M010-40
AB JP 09161806 A UPAB: 19971125
An **electrode** has a **current collector** obtd. by adhering a metallic base of two-dimensional structure, to a porous metallic layer, and an agent including a battery active material, is held in the pores of the porous metallic layer.
ADVANTAGE - A drawing of the **electrode** at **pressure moulding** of the same, and a lowering of the capacity can be reduced.
Dwg.0/7
FS CPI EPI
FA AB
MC CPI: L03-E01B8
EPI: X16-B01; X16-E02

L33 ANSWER 21 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1997-357739 [33] WPIX
DNN N1997-297073
TI AC generator e.g. for motor vehicles - incorporates negative **electrode** slide brush which slides in axial direction at end surface of negative **electrode** side slip ring.
DC X11 X22
PA (NPDE) NIPPONDENSO CO LTD
CYC 1
PI JP 09149603 A 19970606 (199733)* 15p H02K013-00
ADT JP 09149603 A JP 1995-303017 19951121
PRAI JP 1995-303017 19951121
IC ICM H02K013-00
ICS H01R039-00; H02K019-22
AB JP 09149603 A UPAB: 19970813
The AC generator consists of a negative **electrode** side slip ring (42), which is **press**-fitted at the centre hole (37) formed at the rear end of a shaft (5). A negative **electrode** side brush (52) is directly fixed in the rear housing (12) by means of a rivet (55), which passes through the lower wall (20). The lower wall contains the bearing accommodation part (18). The negative **electrode** side brush slides in the axial direction at the end surface of the negative **electrode** side slip ring.
The negative **electrode** side slip ring is manufactured using a conductive copper alloy. The **press moulding** of the negative **electrode** side brush is carried out by a phosphor bronze or a beryllium bronze containing spring steel of a copper alloy.

ADVANTAGE - Reduces thickness of negative **electrode** side brush. Decreases axial length of shaft. Minimises power loss. Enables miniaturisation. Simplifies configuration of **current collector** and brush device.
Dwg.1/13
FS EPI
FA AB; GI
MC EPI: X11-D; X11-J03; X11-U01A; X11-U01D; X11-U02; X22-F02

L33 ANSWER 22 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1997-515823 [48] WPIX
DNN N1997-429089
TI Solidification process monitoring method for matrix of industrial residues mixed with hydraulic **bonder** - uses **electrodes** connected to control module and current source while microprocessor determines fraction of soluble residues left in matrix.
DC P43 S03
IN BOUCHELAGHEM, A; ERLING, J C
PA (SOLS-N) CIE DU SOL SOC CIV
CYC 1
PI FR 2747195 A1 19971010 (199748)* 7p G01N027-04
ADT FR 2747195 A1 FR 1996-4350 19960405
PRAI FR 1996-4350 19960405
IC ICM G01N027-04
ICS B09B003-00; G01N027-12
AB FR 2747195 A UPAB: 19971209
The residue matrix (1) is obtained by solidification of a mixture of industrial residues with a liquid hydraulic **bonder** which is poured in a **mould** (2). A number of **electrodes** (4) are placed on the surface of the solid block thus formed. The **electrodes** are placed along a diagonal at equal distances.
A connection cable (5) is linked to an electronic box and a power supply source. The box controls each of the **electrodes** some of which are used as current sources and others as current sensors. A microprocessor (8) **collects** the **current** values and processes information to determine fraction of soluble residues left in the block.
USE/ADVANTAGE - For assessing solidification level of residue and **bonder** matrix prior to being disposed of. Is simple and enables continuous monitoring of solidification process without destroying matrix.
Dwg.1/2
FS EPI GMPI
FA AB; GI
MC EPI: S03-E02A

L33 ANSWER 23 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1997-097628 JAPIO
TI NONAQUEOUS ELECTROLYTE LITHIUM SECONDARY **BATTERY**
IN MIURA HITOSHI; TERAHARA ATSUSHI; IWASAKI KATSUHIKO; KAMI KENICHIRO; YAMAMOTO TAKETSUGU
PA SUMITOMO CHEM CO LTD
PI JP 09097628 A 19970408 Heisei
AI JP 1996-187106 (JP08187106 Heisei) 19960717
PRAI JP 1995-187054 19950724
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1997
IC ICM H01M010-40
ICS **H01M004-02; H01M004-62**
AB PROBLEM TO BE SOLVED: To enhance cycle characteristics and high rate charge/discharge characteristics by containing a **polymer** having carbonate structure represented by the specific general formula and

number-average molecular weight existing in the specified range in a negative electrode in a lithium secondary **battery**.
SOLUTION: In a lithium secondary **battery** having a positive electrode using a material capable of doping/undoping a lithium ion as an active material and a negative electrode using a carbon material capable of doping/undoping a lithium ion as an active material, the negative **electrode** is prepared by **bonding** a mixture of a **polymer** having carbonate structure represented by formula I, and if necessary a suitable binder and a conductive material to a **current collector** sheet by coating or stretching. The **polymer** having a number-average molecular weight of 300-200000 is selected. A graphite base material is preferable to be contained since charge/discharge capacity per weight is high and average potential during charge/discharge is low. A layer lithium composite oxide is preferable from the standpoint of high voltage, high energy density, and excellent cycle characteristics.
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L33 ANSWER 24 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1997-070332 [07] WPIX
DNN N1997-058118 DNC C1997-022764
TI **Electrode** made of hydrogen storage material - comprises mulling hydrogen storage material powder, thickener and binder into slurry, mixing with porous **current collecting** material and **moulding.**
DC A85 L03 X16
PA (CHUB) CHUBU DENRYOKU KK; (MITO) MITSUBISHI JUKOGYO KK
CYC 1
PI JP 08315806 A 19961129 (199707)* 4p H01M004-24
ADT JP 08315806 A JP 1995-119608 19950518
PRAI JP 1995-119608 19950518
IC ICM H01M004-24
AB JP 08315806 A UPAB: 19970212
Rechargeable hydrogen storage material powder, thickener and a binder are mulled into a slurry-type material, and then the material and a porous **current collecting** material are mixed and **moulded** into the **electrode** by using a **moulding** box.
USE - Used for the negative pole of a sec. cell.
ADVANTAGE - A cell using the **electrode** has improved running life. The prodn. cost is reduced since the hydrogen storage material is reusable when using an elastomer-type binder.
Dwg.1/5
FS CPI EPI
FA AB; GI
MC CPI: A12-E06A; L03-E01B
EPI: X16-E05C

L33 ANSWER 25 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1996-314468 [32] WPIX
DNN N1996-264628 DNC C1996-099931
TI Mfr. of alkaline sec. battery - by filling **current collector** with paste contg. nickel hydroxide powder, drying, **pressurising** and **moulding.**
DC L03 X16
PA (RAYN) TOSHIBA BATTERY CO LTD
CYC 1
PI JP 08138662 A 19960531 (199632)* 6p H01M004-26
ADT JP 08138662 A JP 1994-272581 19941107
PRAI JP 1994-272581 19941107

IC ICM H01M004-26
ICS H01M004-64; H01M010-30
AB JP 08138662 A UPAB: 19960819
Prodn. of battery comprises filling a **current collector** with paste contg. nickel hydroxide powder, drying the **collector** and **pressurising** and **moulding** the **collector** so that the Vicker's hardness on the surface of the collector becomes 50 to 250 HV to form a positive **electrode**.
ADVANTAGE - A paste nickel positive **electrode** having uniform charging density of active materials can be obtd. and the using rate of the positive **electrode** and charge/discharge cycle of the battery can be improved.
Dwg.1/6
FS CPI EPI
FA AB; GI
MC CPI: L03-E01B4
EPI: X16-B01A; X16-E05

L33 ANSWER 26 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1995-157002 [21] WPIX
DNN N1995-123676 DNC C1995-072272
TI Preparation of nickel hydroxide for nickel **electrode** for secondary battery - by dissolving ions of other metals than nickel in nickel hydroxide, then eluting partial amount of ions from hydroxide, filling porous **current collector** with active material paste of resulting hydroxide.
DC A85 L03 X16
IN IWANE, N; SAWA, H
PA (FURB) FURUKAWA DENCHI KK; (FURB) FURUKAWA BATTERY CO LTD; (FURU) FURUKAWA ELECTRIC CO LTD
CYC 5
PI EP 650207 A1 19950426 (199521)* EN 10p H01M004-52
R: DE FR GB
JP 07122271 A 19950512 (199528) 5p H01M004-32
US 5549992 A 19960827 (199640) 8p H01M004-02
EP 650207 B1 19980429 (199821) EN 13p H01M004-52
R: DE FR GB
DE 69409909 E 19980604 (199828) H01M004-52
ADT EP 650207 A1 EP 1994-116554 19941020; JP 07122271 A JP 1993-266544 19931025; US 5549992 A US 1994-320863 19941011; EP 650207 B1 EP 1994-116554 19941020; DE 69409909 E DE 1994-609909 19941020, EP 1994-116554 19941020
FDT DE 69409909 E Based on EP 650207
PRAI JP 1993-266544 19931025
REP 01Jnl.Ref; EP 271043; EP 337029; EP 353837; EP 544011; JP 04337246
IC ICM H01M004-02; H01M004-32; H01M004-52
ICS H01M010-30
AB EP 650207 A UPAB: 19950602
The method involves dissolving ions of other metals from the group consisting of one metal selected from Zn, Cd, Mg, Ca, Mn, Co, Cu and Al. The elution process is carried out using an alkaline aqueous solution. The weight of the metal ions remaining in the nickel hydroxide after the elution process is 5 percent less of the weight of the nickel hydroxide.
The conductive material is a material selected from a group of nickel powder, cobalt powder and cobalt oxide powder. The **current collector** is a spongy expanded nickel. A PTFE binder and an aq. soln. of CMC as thickener are used with Ni hydroxide and conductive material to form the active material paste.
ADVANTAGE - Restrains deformation of expansion of the nickel **electrode** and lowers the discharge capacity of the battery despite

repeated charge and discharge of the battery.
Dwg.3/3
FS CPI EPI
FA AB; GI
MC CPI: A03-A04A; A04-E08; A12-E06; L03-E01B4
EPI: X16-B01A; X16-E01G

L33 ANSWER 27 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1994-290790 JAPIO
TI MANUFACTURE OF **CURRENT-COLLECTING ELECTRODE** FOR LAYER-BUILT CELL
IN ITO HIROMICHI; HASHIGUCHI YUJI
PA MEIDENSHA CORP
PI JP 06290790 A 19941018 Heisei
AI JP 1993-76051 (JP05076051 Heisei) 19930402
PRAI JP 1993-76051 19930402
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994
IC ICM **H01M004-88**
ICS **H01M004-96**; H01M012-08
AB PURPOSE: To manufacture a **current-collecting electrode** for a layer-built cell which can considerably lessen warp of its **molding**.
CONSTITUTION: In manufacturing a **current-collecting electrode press-molding**, a **current-collecting** wire netting 22 is sandwiched in carbon **plastic** plates 21a, 21b and the two are mutually heat attached and a **current-collecting** terminal 24 is led out from the middle of the **current-collecting** wire netting 22 to the rear surface (the side 21b of the carbon **plastic** plate). Molten resin (glass fiber- reinforced polyethylene) is poured in the side periphery (t1 portion) of the **current-collecting electrode press-molding** and in the rear periphery (t3 portion), using a metal **mold** or the like so that an insulating frame 30 is formed. In the rear surface of the **press-formed current-collecting electrode**, molten resin is thus placed only on the outer periphery of small width, so that no warping occurs due to resin contraction.
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L33 ANSWER 28 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1994-036807 JAPIO
TI MANUFACTURE OF **CURRENT COLLECTING ELECTRODE** OF ZINC-BROMINE BATTERY
IN ANDO YASUO; JINNAI KENICHIRO; HOSONO HIROSHI; YOSHIOKA YASUHIRO; NAMIKI YASUHARU
PA MEIDENSHA CORP
PI JP 06036807 A 19940210 Heisei
AI JP 1992-191787 (JP04191787 Heisei) 19920720
PRAI JP 1992-191787 19920720
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1994
IC ICM H01M012-08
ICS **H01M004-96**
AB PURPOSE: To provide a manufacturing method of a **current collecting electrode** of a zinc-bromine battery, with which a factor of inducing an inferior characteristic such as liquid leakage of an electrolyte by improving the flatness as well as the smoothness of the **current collecting electrode**, and whereby improving the performance of the battery.
CONSTITUTION: A **current collecting** part 18 is formed out of a **current collecting** mesh 6 that is sandwiched

and fixed in a carbon **plastic** by **electrode** 15, by a heat **pressing** means. An insulating frame 16 is formed, on which a recessed part 17 having a specific area and depth is formed on the flat center part in one side, by an injection **molding** means. A **current collecting electrode** 7 is formed by fitting the **current collecting** part 18 into the recessed part 17 of the insulating frame 16 and by thermally welding it.
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L33 ANSWER 29 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1993-047420 JAPIO
TI NONAQUEOUS ELECTROLYTE SECONDARY **BATTERY**
IN FUJIMOTO MASAHISA; YOSHINAGA NORIYUKI; FURUKAWA SANEHIRO
PA SANYO ELECTRIC CO LTD
PI JP 05047420 A 19930226 Heisei
AI JP 1991-208168 (JP03208168 Heisei) 19910820
PRAI JP 1991-208168 19910820
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1993
IC ICM H01M010-40
ICS **H01M004-02; H01M004-58**
AB PURPOSE: To enhance energy density per weight by using a specific conductive **polymer** as a positive electrode.
CONSTITUTION: A negative **electrode** 1 is **press**-fitted to a negative electrode **current collector** 3 fixed to the inner bottom surface of a negative can 2. A positive **electrode** 4 is **press**-fitted to a positive electrode **current collector** 6 secured to the inner bottom surface of a positive electrode can 5. An electrolyte including trifluoromethane sulfonate lithium dissolved in propylene carbonate is impregnated in a separator 7. A conductive **polymer** doped with a magnitude anion having an ion formula weight larger than that of a perchloric acid ion is used as the positive electrode 4. A specific gravity of the **polymer** is about 1, that is, it is much lighter than a metal oxide conventionally used as a positive electrode active material. A capacity of the **polymer** is 200mAh/g or larger, which is equal to or larger than that of the metal oxide. Furthermore, an operating voltage is as high as 3V or more. Consequently, it is possible to enhance energy density of a **battery** per weight.
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L33 ANSWER 30 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1991-059623 [09] WPIX
DNN N1991-046188
TI Back-up power supply double layer capacitor for memory - comprises two polarised **electrodes** each comprising porous sintered and joined fine particles of activated carbon.
DC V01 X16
IN KURABAYASH, K; TSUCHIYA, Y; KURABAYASHI, K
PA (ISUZ) ISUZU MOTORS LTD
CYC 11
PI EP 414420 A 19910227 (199109)*
R: DE FR GB IT NL
CA 2020547 A 19910223 (199118)
JP 03078221 A 19910403 (199120)
CN 1049746 A 19910306 (199145)
US 5136472 A 19920804 (199234) 11p H01G009-02
EP 414420 A3 19920401 (199328)
CA 2020547 C 19941129 (199503) H01G004-08
EP 414420 B1 19941214 (199503) EN 12p H01G009-00
R: DE FR GB IT NL

DE 69015053 E 19950126 (199509) H01G009-00
CN 1024725 C 19940525 (199529) H01G009-00
ADT EP 414420 A EP 1990-308781 19900809; JP 03078221 A JP 1989-215277 19890822; US 5136472 A US 1990-550170 19900709; EP 414420 A3 EP 1990-308781 19900809; CA 2020547 C CA 1990-2020547 19900705; EP 414420 B1 EP 1990-308781 19900809; DE 69015053 E DE 1990-615053 19900809, EP 1990-308781 19900809; CN 1024725 C CN 1990-107306 19900822
FDT DE 69015053 E Based on EP 414420
PRAI JP 1989-215277 19890822
REP NoSR.Pub; 4.Jnl.Ref; DE 3530772; DE 3801719; EP 212572; JP 55113850; JP 60189162; JP 62052115; JP 62292612
IC ICM H01G004-08; H01G009-02
ICS H01G004-20
AB EP 414420 A UPAB: 19931116
The capacitor has two polarised **electrodes** (32) separated by an electrolyte impregnated separator (33). A non-conductive plastic gasket (34) is attached to the **current collectors** (31) to form a double layer capacitor. The collectors are made of electrically conductive plastic and are thermally fused to the **electrodes**.

The polarised **electrodes** are pre-manufactured by placing powder of fine particles of activated carbon in a sintering **mould**. A switch-controlled charged capacitor circuit is connected to the **mould** via **electrodes**. Sharp pulses are applied to the **mould** until the fine particles are stably **bonded** to each other.

ADVANTAGE - Greater electrostatic capacitance per unit volume. Lower internal resistance. Does not require **pressure**. Simple construction. @(11pp Dwg.No.9/11)@
9/11
FS EPI
FA AB; GI
MC EPI: V01-B01A; V01-B01D; V01-B01X; X16-L02

L33 ANSWER 31 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1991-081955 JAPIO
TI MANUFACTURE OF POSITIVE ELECTRODE PART OF **BATTERY**
IN YAMAMOTO KOHEI; HINO YOSHIHISA; HARADA YOSHIRO; TANAKA YUZO
PA FUJI ELELCTROCHEM CO LTD
PI JP 03081955 A 19910408 Heisei
AI JP 1989-216144 (JP01216144 Heisei) 19890824
PRAI JP 1989-216144 19890824
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
IC ICM **H01M004-08**
ICS H01M006-16
AB PURPOSE: To reduce the thickness of a pos. electrode part to a great extent by making a **current collector** from an Al foil with ample ductility, and forming a pos. electrode black mix in such a composition as attaching to the Al foil.
CONSTITUTION: As pos. electrode active substance is used vanadium pentoxide V<SB>2</SB>O<SB>5</SB>, and 2 thru 15 parts electroconductive agent is mixed with 100 parts V<SB>2</SB>O<SB>5</SB>. These pos. electrode black mix, electroconductive agent, a small amount of binder, **plasticizer**, and solvent are mixed together and shaped into a sheet by extrusion molding. The solvent, binder, and **plasticizer** are pyrolyzed by raising the temp. in steps at the driving process, and a sheet from black mix for pos. electrode is achieved. This is attached by **pressure** to a pos. **electrode current collector** consisting of Al foil. The thickness of this Al foil shall be below 50μm.

L33 ANSWER 32 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1991-043956 JAPIO
TI MANUFACTURE OF **CURRENT COLLECTING ELECTRODE** FOR STACKED CELL
IN ANDO YASUO
PA MEIDENSHA CORP
PI JP 03043956 A 19910225 Heisei
AI JP 1989-178828 (JP01178828 Heisei) 19890711
PRAI JP 1989-178828 19890711
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1991
IC ICM **H01M004-00**
ICS H01M012-08
AB PURPOSE: To ensure melt-**bonding** with an insert and to prevent electrolyte leakage from the interface by injecting molten **plastic** from a gate arranged in a part corresponding to the back side of an **electrode** accommodated in the **molding** space of a **mold** for insert injection **molding**.
CONSTITUTION: A gate 33 positioned in a part corresponding to a thick part 31a of an insulating frame 31 is replaced with a gate 37 positioned in a part corresponding to the back side of an **electrode** 30. When molten **plastic** is injected from the gate 37, high temperature molten **plastic** is directly brought into contact with the **electrode** 30 before it is cooled in a **molding** space 36, and strongly **bonded** to the **electrode** 30 to form an insulating frame 31 serving as a **current collecting electrode**. When the **current collecting electrode** is used as the end plate **electrode** for assembling a stack, electrolyte leakage is avoided.
COPYRIGHT: (C)1991,JPO&Japio

L33 ANSWER 33 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1990-129851 JAPIO
TI SECONDARY **BATTERY** AND ELECTRODE FOR SECONDARY **BATTERY** AND MANUFACTURE THEREOF
IN MIYAZAKI KAZUHIDE; KATO KAZUHIKO; MOTOMURA TOMOTAKA
PA MITSUI MINING & SMELTING CO LTD
PI JP 02129851 A 19900517 Heisei
AI JP 1988-280458 (JP63280458 Showa) 19881108
PRAI JP 1988-280458 19881108
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1990
IC ICM **H01M004-02**
ICS **H01M004-04**; H01M010-40
AB PURPOSE: To remarkably increase capacity per weight and to prevent separation of a highly conductive **polymer** film by using an electrode prepared by stacking an electrolytic deposition film of conductive polyaniline resin, conductive polyaniline resin, and a **current collector**.
CONSTITUTION: An electrode prepared by stacking an electrolytic deposition film of conductive polyaniline resin, conductive polyaniline resin, and a **current collector** is used for a secondary **battery**. The **electrode** is prepared by **molding** a conductive polyaniline thin film obtained by electrolytic **polymerization** containing a dopant and a **current collector** with a solution containing conductive polyaniline resin containing a dopant without using a binder. Since the electrode holds the structure of highly conductive polyaniline resin, electrical capacity per weight is remarkably increased. Since it is molded through no binder, high conductivity, high adhesion, and suitable softness are obtained.
COPYRIGHT: (C)1990,JPO&Japio

L33 ANSWER 34 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1989-093053 JAPIO
TI ELECTRODE FOR **BATTERY**
IN OSAWA TOSHIYUKI; KIMURA OKITOSHI; KAHATA TOSHIYUKI; KONO MICHIYUKI; ISA TAKUMI; FUKUDA MINORU
PA RICOH CO LTD
JAPAN CARLIT CO LTD:THE
PI JP 01093053 A 19890412 Heisei
AI JP 1987-248092 (JP62248092 Showa) 19871002
PRAI JP 1987-248092 19871002
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1989
IC ICM **H01M004-02**
ICS **H01M004-66**
AB PURPOSE: To make the discharge voltage of an electrode flat, to lengthen the life of a **battery**, and to increase energy density by forming a metal oxide film on a metallic **current collector**, and **bonding** an **electrode** active material thereon to form an electrode.
CONSTITUTION: An aluminium foil is used as the metal for a **current collector**, and it is immersed in an electrolyte containing acid, then voltage is applied thereto to make the surface rough. The foil is anodically oxidized in an electrolyte such as ammonium adipate aqueous solution to form an oxide layer, then immersed in peroxide such as ammonium persulfide, and treated with the monomer of conductive **polymer** to form a chemically oxidized **polymerization** film on the oxide layer, then electrolytical **polymerization** is conducted in an electrolyte containing an organic solvent to form an electrolytically oxidized **polymerization** film thereon. By producing the electrode by forming a metal oxide layer on the **current collector**, the flatness of discharge voltage is increased, the life of a **battery** is lengthened, and energy density is increased.
COPYRIGHT: (C)1989,JPO&Japio

L33 ANSWER 35 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1989:26679 HCAPLUS
DN 110:26679
TI Hydrogen-storage alloy **anode** and its manufacture
IN Mitsuyasu, Kiyoshi; Kanda, Motoya; Takeno, Kazuta; Kochiwa, Kenichi
PA Toshiba Corp., Japan; Toshiba Battery Co., Ltd.
SO Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DT Patent
LA English
IC ICM H01M004-00
ICS H01M004-62
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 56
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 284063	A1	19880928	EP 1988-104735	19880324
	EP 284063	B1	19920129		
	R: DE, FR, GB				
	JP 64000649	A2	19890105	JP 1988-60441	19880316
	US 4849312	A	19890718	US 1988-171815	19880322
PRAI	JP 1987-69225		19870325		
	JP 1988-60441		19880316		

AB The **anode** is prepd. from a mixt. of 100 parts powd. H-storage

alloy, an elec. conducting powder, and a polymer binder of 0.1-0.8 poly(acrylic acid salt) and 0.5-4 parts PTFE. The d. of the H-storage alloy is .gtoreq.4.0 g/cm3 and the alloy powder is coated with a poly(acrylic acid salt) whose 3-dimensional reticulate mol. chain was partly severed by high-speed stirring. The paste is coated on a **current collector**, dried, and **pressure molded**. Powd. LaNi4.7Al0.3 (100 g, 20 .mu.m) was mixed with 0.1 or 0.5 g Na polyacrylate, C, 1.65 mL PTFE dispersion, water, and optionally with 0.5 g CMC or 0.5 g poly(vinyl alc.), or 0.25 g CMC and 0.25 g poly(vinyl alc.), and the mixt. was stirred at a high speed. Punched metal collectors were coated with the prepd. pastes, dried in 80.degree. air, and roll **pressed** until **current collector** was stretched 20% in length. The obtained **anodes** had higher strength than **anodes** using pastes contg. less amt. of Na polyacrylate and/or PTFE.

ST battery **anode** hydrogen storage; sodium polyacrylate PTFE hydrogen **anode**; lanthanum nickel aluminum hydrogen **anode**

IT **Anodes**
(battery, hydrogen-absorbing aluminum lanthanum nickel alloy, contg. PTFE and sodium polyacrylate binders)

IT 1333-74-0, Hydrogen, uses and miscellaneous
RL: USES (Uses)
(aluminum lanthanum nickel alloy contg. absorbed, **anodes**, PTFE and sodium polyacrylate binders in, for batteries)

IT 9003-04-7, Sodium polyacrylate
RL: USES (Uses)
(binders, **anodes** contg. PTFE and, hydrogen-absorbing alloy, for batteries)

IT 9002-84-0, PTFE
RL: USES (Uses)
(binders, **anodes** contg. sodium polyacrylate and, hydrogen-absorbing alloy, for batteries)

IT 82089-05-2, LaNi4.7Al0.3
RL: USES (Uses)
(hydrogen-absorbing, **anodes**, PTFE and sodium polyacrylate binders in, for batteries)

L33 ANSWER 36 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1988-245871 JAPIO
TI SOLID ELECTROCHEMICAL ELEMENT AND MANUFACTURE THEREOF
IN KONDO SHIGEO; TONOMURA TADASHI
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 63245871 A 19881012 Showa
AI JP 1987-263457 (JP62263457 Showa) 19871019
PRAI JP 1986-263408 19861105
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1988
IC ICM H01M010-36
ICS H01G009-00; **H01M004-02**

AB PURPOSE: To obtain a solid electrochemical element having flexibility sufficiently bearable to mechanical impact by using material consisting of solid electrolyte and **electrode** material enclosed by **plastic** resin as components.
CONSTITUTION: **Plastic** resin 3 is dry- or wet-mixed with solid electrolyte grains 1 and **electrode** material grains 2 in a proper ratio respectively, and the surface of the grains 1, 2 is completely covered with the **plastic** resin 3. Then this mixture is **pressure molded** into a proper form by means of a **press** or the like while being heated if necessary. **Molded** bodies of **electrode** material A, C are **pressure molded** again with a thus **molded** solid electrolyte

molded body B between them to be integrated with other components of an element such as **current collecting** bodies 4, etc., if necessary. By this, a solid electrochemical element having a mechanically strong flexibility which is less likely to be affected by oxygen, moisture, etc., can be obtained.
COPYRIGHT: (C)1988,JPO&Japio

L33 ANSWER 37 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1986-128462 JAPIO
TI MANUFACTURE OF HYDROGEN ABSORPTION **ELECTRODE**
IN YANAGIHARA NOBUYUKI; KAWANO HIROSHI; IKOMA MUNEHISA
PA MATSUSHITA ELECTRIC IND CO LTD
PI JP 61128462 A 19860616 Showa
AI JP 1984-250835 (JP59250835 Showa) 19841128
PRAI JP 1984-250835 19841128
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1986
IC ICM **H01M004-26**
AB PURPOSE: To simplify the manufacture of a hydrogen absorption **electrode** by activating a hydrogen absorption alloy having high equilibrium **pressure** and hydrogenating a hydrogen absorption alloy having low equilibrium **pressure** within a sealed container in which hydrogen **pressure** can be controlled.
CONSTITUTION: A hydrogen absorption alloy which electrochemically absorbs and desorbs hydrogen in an alkaline solution is used for a negative **electrode** as hydrogen absorption **electrode**. Two or more kinds of hydrogen absorption alloy powder having different hydrogen equilibrium **pressure** are placed in a sealed container. The hydrogen atmosphere in the container is controlled higher than hydrogen absorption **pressure** of the hydrogen absorption alloy having low hydrogen equilibrium **pressure** and lower than hydrogen absorption **pressure** of the hydrogen absorption alloy having high hydrogen equilibrium **pressure** to perform hydrogenation and activation respectively. An alkali resistant **polymer** binder is added to the alloy powder, then they are **molded** together with a **current collector**. Thereby, the high performance **electrode** is obtained and the manufacturing process is simplified and the cost is reduced.
COPYRIGHT: (C)1986,JPO&Japio

L33 ANSWER 38 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1985-249283 [40] WPIX
DNN N1985-186442 DNC C1985-108184
TI Second-order **electrode current collector** prodn. - from mass of silver particles, coated with silver chloride and gelatin or poly-N-vinyl pyrrolidone, and acrylic copolymer.
DC A89 J04 P31 S03 S05
IN MIKITJUK, I M; SMERDOVAA; TISCHENKO, A G; VOLZHENSKY, D S; ZABEGLOVSK, I S
PA (RADI-R) RADIOELTRN MED EQUI; (REMA-R) REMA RADIOELTRN MED
CYC 5
PI WO 8504253 A 19850926 (198540)* RU 31p
W: DE GB HU JP SE
SE 8505192 A 19851104 (198604)
DE 3490675 T 19860403 (198615)
GB 2166553 A 19860508 (198619)
HU 39017 T 19860728 (198635)
JP 61501524 W 19860724 (198636)
GB 2166553 B 19880113 (198802)
DE 3490675 C 19880407 (198814)
SE 460624 B 19891030 (198946)
ADT WO 8504253 A WO 1984-SU17 19840321; DE 3490675 T DE 1984-3490675 19840321;

GB 2166553 A GB 1984-26416 19840321; JP 61501524 W JP 1984-503048 19840321
PRAI WO 1984-SU17 19840321
REP SU 500897; SU 558620; US 3834373
IC A61B005-04; G01N027-30
AB WO 8504253 A UPAB: 19930925
The **current collector** is formed from a homogeneous mass of 70-100 (pref. 70-95, more pref. 75-85) wt.% of galvanically treated Ag particles (I) and pref. 5-30 (more pref. 15-25) wt.% rapid-hardening acrylic copolymer. (I) is obtd. by galvanically coating Ag particles with AgCl and gelatin or poly-N-vinyl-pyrrolidone in an Ag: AgCl: gelatin or polymer wt. ratio of 69-97.9:2-30: 0.1-1, pref. 81.9-84:15-18:0.1-1.

Acrylic copolymer is a finely dispersed copolymer of (m)ethyl methacrylate esters and a fluoro-rubber, opt. in suspension form.

Typically Ag particles are galvanically chlorinated in the presence of gelatin or poly-N-vinyl-pyrrolidone; a homogeneous mass is then formed of the above compsn., shaped and hardened in the presence of stabilised methyl methacrylate. The mass is pref. shaped at 0.3-100 MPa **pressure**.

USE/ADVANTAGE - In cells for bio-potential measurement, e.g. electro-cardiographic, electro-encephalographic etc. testing; and also in pH meters. It has highly stable and reproducible characteristics, high durability and low cost.

0/0
FS CPI EPI GMPI
FA AB
MC CPI: A03-C01; A04-D05; A04-F06B; A12-E09; A12-L04; A12-V03C; J04-B01
EPI: S03-E03C; S05-D01A

L33 ANSWER 39 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1985-248902 [40] WPIX
DNN N1985-186207 DNC C1985-107956
TI Cermet **electrode** for electrolytic cell, pref. hall heroult cell - is prepd. by cold isostatic **moulding** cermet onto **current collector** then hot isostatic **pressing**.
DC L03 M28 X25
IN CLARK, J M; LANDON, T E; SECRIST, D R
PA (GREL) GREAT LAKES CARBON CORP
CYC 1
PI US 4541912 A 19850917 (198540)* 4p
ADT US 4541912 A US 1983-560456 19831212
PRAI US 1983-560456 19831212
IC B29F005-00; C04B035-00; C25B011-02
AB US 4541912 A UPAB: 19930925
A cermet **electrode** assembly for an electrolytic cell is prepd. by (a) cold isostatic **moulding** at least one layer of cermet material onto part of a metal **current collector**; and (b) hot isostatic **pressing** in a O2-free atmos. to sinter the cermet and **bond** it to the **current collector**.

USE/ADVANTAGE - The **electrodes** are useful for electrolytic processes including electrowinning metals from molten salts, esp. in a Hall-Heroult cell (claimed), aq. electrolysis, and/or electrolytic prodn. or refining of e.g. Mg, Cu, Zn, Na, Cl, NaOH, Ag, Au, Pt. The cermet portion is impervious and may be made up to several in. thick to provide long service life. The **electrode** can be foremed in complex shapes, and processing time is shorter than for conventional sintering.

0/0
FS CPI EPI
FA AB
MC CPI: L02-J01B; L03-A01A; L03-A02; M22-H03F; M28-C

EPI: X25-R01B; X25-R02

L33 ANSWER 40 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1985:429214 HCAPLUS
DN 103:29214
TI Nonaqueous electrolyte battery
PA Seiko Instruments and Electronics, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM H01M004-06
ICS H01M002-20
CC 72-3 (Electrochemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59224059	A2	19841215	JP 1983-99015	19830603

AB A Li-MnO2 nonaq. battery is described which has the MnO2 contg. a **current collector** of metal powder **pressure molded** before installing in the **cathode** can in order to prevent warping of the **cathode** by the **current collector**. The Li **anode** is **pressed** and fixed to the **anode current collector** which is fixed to the **anode** can by spot welding. A separator of nonwoven fabric impregnated with the nonaq. electrolyte is placed between the **anode** and **cathode**.
ST lithium manganese oxide nonaq battery; **cathode** battery warping prevention
IT Batteries, primary
(lithium-manganese dioxide, nonaq. electrolyte)
IT **Cathodes**
(battery, manganese dioxide, warping prevention of)
IT 7439-93-2, uses and miscellaneous
RL: USES (Uses)
(**anode**, in nonaq. electrolyte battery with manganese dioxide)
IT 1313-13-9, uses and miscellaneous
RL: USES (Uses)
(**cathode**, in nonaq. electrolyte battery with lithium, warping prevention of)

L33 ANSWER 41 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1984:519346 HCAPLUS
DN 101:119346
TI Nonaqueous battery
PA Toshiba Battery Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC H01M006-14
CC 72-3 (Electrochemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 59035363	A2	19840227	JP 1982-144062	19820820

AB A C fiber **cathode current collector** for a nonaq. battery is prepd. by **molding** C fiber (0.2 mm length and 13 .mu.m diam. in a paste with CM-cellulose) into a cylinder and then heating in a N atm. to form a C fiber **mold**. This C fiber

cathode current collector, having uniform porosity, low elec. resistance, a moisture content <0.02%, and good electrochem. activity, is used in a Li battery with a separator.

ST carbon fiber **cathode current collector**; nonaq battery lithium carbon fiber

IT Carbon fibers
RL: USES (Uses)
(**cathode current collector**, for lithium nonaq. battery)

IT Batteries, primary
(nonaq., lithium, with carbon fiber **molded current collector**)

IT **Cathodes**
(battery, **molded** carbon fiber **current collector**)

IT 9004-32-4
RL: PRP (Properties)
(**molding** carbon fiber paste with, for **cathode current collector** for lithium nonaq. battery)

L33 ANSWER 42 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1984:519345 HCAPLUS
DN 101:119345
TI Lithium battery **anode**
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC H01M004-12
CC 72-3 (Electrochemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59031562	A2	19840220	JP 1982-140606	19820812

AB Li metal is **molded** into a cylinder by extruding from a circular nozzle, and then a **current collector** bar is **pressed** into the cylinder. The contact resistance is decreased by making the outer diam. of the **current collector** bar the same or slightly larger than the inner diam. of the Li cylinder.

ST lithium **molded** battery **anode**; **current collector molded** lithium **anode**

IT **Anodes**
(battery, lithium, **molded** cylinder with inner **current collector**)

IT 7439-93-2, uses and miscellaneous
RL: USES (Uses)
(**anode**, battery, **molded** cylinder with inner **current collector**)

L33 ANSWER 43 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1985:194044 HCAPLUS
DN 102:194044
TI Hydrogen chloride electrolyzer with a unitary membrane-**electrode** structure with discrete **anode** projections
IN Balko, Edward N.
PA General Electric Co., USA
SO Can., 25 pp.
CODEN: CAXXA4
DT Patent

LA English
IC ICM C25B001-24
CC 72-9 (Electrochemistry)
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI CA 1179631	A1	19841218	CA 1981-382438	19810724

AB Method and app. are described for electrolyzing aq. halides in which coevolution of O at the **anode** is minimized while operating at temps. which maximize the cell efficiency. These cells have **anodes** and **cathode bonded** to the ion-exchanging membranes (Nafion 120). The **anodes** are particulate masses of temp.-stabilized reduced oxides of Pt metals e.g. Ir and Ru mixed with PTFE particles. The **cathodes** are Pt black/PTFE mixts. and Nb **anode** collector screens are provided. Other **current collectors** are made of compression **molded** graphite and Kynar.
ST halide electrolysis halogen prodn; hydrochloric acid electrolysis chlorine prodn
IT Electrolytic cells
(diaphragm, for hydrochloric acid electrolysis)
IT 7782-42-5, uses and miscellaneous
RL: USES (Uses)
(**anodes** for Kynar and, for hydrochloric acid electrolysis)
IT 24937-79-9
RL: PRP (Properties)
(**anodes** from graphite and, for hydrochloric acid electrolysis)
IT 7440-03-1, uses and miscellaneous
RL: USES (Uses)
(**anodes**, for hydrochloric acid electrolysis)
IT 7440-06-4, uses and miscellaneous
RL: USES (Uses)
(**anodes**, iridium oxide/ruthenium oxide-coated, for hydrochloric acid electrolysis)
IT 11113-84-1 12645-46-4
RL: PRP (Properties)
(coatings, on platinum **anodes**, for hydrochloric acid electrolysis)
IT 7647-01-0, reactions
RL: RCT (Reactant)
(electrolysis of, unitary membrane-**electrode** cell for)
IT 63346-31-6
RL: PRP (Properties)
(membranes, in cell for hydrochloric acid electrolysis)

L33 ANSWER 44 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1984-089695 [15] WPIX
DNN N1984-066920 DNC C1984-038055
TI Coating carbon fibre, felt or **moulding** with metal carbide - of Gp-IV Gp-V, or Gp-VI transition metal by meniscus process using lead or zinc alloy melt.
DC L02 M22 P42 P73 X16
IN KUGLER, T; VIRE, S
PA (SWAL) SCHWEIZ ALUMINIUM AG
CYC 3

PI DE 3331698	A	19840405 (198415)*	16p
FR 2533913	A	19840406 (198419)	
NL 8303322	A	19840501 (198422)	

ADT DE 3331698 A DE 1983-3331698 19830902; FR 2533913 A FR 1983-15804

19831004; NL 8303322 A NL 1983-3322 19830928
PRAI CH 1982-5818 19821004
IC B05D001-12; B32B007-02; C04B035-56; C04B041-06; C23C001-00; C23C007-00; C23C009-00; C23C017-00; C25B011-00; C25C003-12; H01M004-14
AB DE 3331698 A UPAB: 19930925
Coating carbon component with a thin film of a carbide of gp. IVB, VB and/or VIB metal(s) is carried by a meniscus process using an alloy based on Pb, Zn, Pb-Zn or Zn-Al and contg. 0.1-10wt.% gp. IVB, VB and/or VIB metal(s) by heating 0.1-30 min. at 700-1100 deg. C to form a wettable electroconductive film on the component.

If a Pb-Zn or Zn-Al alloy is used, the Zn content is pref. 15-45 wt.%, the coating temp. being higher for the lower Zn contents with Zn-Al alloys and max. 960 deg. C for an alloy Al alloy with min. 40 wt.% Zn. For Pb-Zn alloys with max. 95 wt.% Pb, the max. coating temp. is 900 deg. C. The meniscus process is carried out under a protective gas, pref. without excess **pressure** and without protective melt. The metal added to the alloy is Ti, Ta, Cr or W.

The process is useful for producing wettable protective, adhesive or contact films on porous or nonporous carbon filaments, fibres, fabrics, felts or **mouldings**, including **electrodes** for Al mfr. A firmly adhering carbide film is formed rapidly and impurities are not introduced. In examples, uses include **current collectors** for lead-acid batteries.
0/0
FS CPI EPI GMPI
FA AB
MC CPI: L02-H04A; M13-D
EPI: X16-E02; X16-E04

L33 ANSWER 45 OF 67 HCAPLUS COPYRIGHT 2002 ACS DUPLICATE 1
AN 1984:217725 HCAPLUS
DN 100:217725
TI Hydrogen oxidation behavior and structure of gas-diffusion **electrodes** consisting of tungsten carbide-poly(tetrafluoroethylene) system
AU Hojo, Junichi; Nakahara, Katsumasa; Matsumoto, Masashi; Kato, Akio
CS Coll. Eng., Kyushu Univ., Fukuoka, Japan
SO Funtai Oyobi Funmatsuyakin (1984), 31(2), 45-50
CODEN: FOFUA2; ISSN: 0532-8799
DT Journal
LA Japanese
CC 72-2 (Electrochemistry)
Section cross-reference(s): 67
AB Porous gas-diffusion **electrodes** contg. WC catalyst (particles size: 0.07 or 1.2 .mu.) were prepd. by the sintering of WC/PTFE powder mixt., and their H oxidn. activity was investigated at the potential below +300 mV (vs. normal H **electrode**) in 1N H2SO4 under 1 atm H at 25.degree. with emphasis on the effect of the **electrode** structure. It was confirmed that there is a most appropriate amt. of PTFE. H oxidn. is governed by the elec. cond. of the **electrode**, i.e., the **current-collecting** ability. An increase in **molding pressure** of the **electrode** film accelerated the H oxidn. which may be due to the combined effect of a moderate hydrophobic action by PTFE and the increase in the elec. cond. of the **electrode**.
ST hydrogen oxidn gas diffusion **anode**; tungsten carbide catalyst electrooxidn hydrogen; PTFE tungsten carbide **anode** hydrogen
IT **Anodes**
(gas-diffusion, PTFE/tungsten carbide, for hydrogen)
IT Electric conductivity and conduction

(of gas-diffusion **anode**, hydrogen oxidn. in relation to)
IT Oxidation, electrochemical
(of hydrogen, on PTFE/tungste carbide gas-diffusion **anode**)
IT Oxidation catalysts
(electrochem., tungsten carbide, for hydrogen oxidn.)
IT 12070-12-1
RL: PRP (Properties)
(catalytic gas-diffusion **anode** from PTFE and, hydrogen oxidn. on)
IT 9002-84-0
RL: PRP (Properties)
(gas-diffusion **anode** from tungsten carbide and, hydrogen oxidn. on)
IT 1333-74-0, reactions
RL: RCT (Reactant)
(oxidn. of, on PTFE/tungsten carbide gas-diffusion **anode**)

L33 ANSWER 46 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1983-717268 [29] WPIX
DNN N1983-127793 DNC C1983-069294
TI Battery with at least 1 **electrode** of **current collector** - and electro active polymer capable of undergoing reversible oxidn. or redn. to form linear charged polymer.
DC A18 A85 L03 X12 X16
IN PAPIR, Y S
PA (CALI) CHEVRON RES CO
CYC 14
PI WO 8302368 A 19830707 (198329)* EN 52p
RW: AT BE CH DE FR GB LU NL SE
W: DE GB JP NL
NL 8220498 A 19831101 (198349)
EP 96723 A 19831228 (198401) EN
R: DE FR GB NL
GB 2122804 A 19840118 (198403)
JP 59500033 W 19840105 (198407)
DE 3249282 T 19841213 (198451)
GB 2122804 B 19860205 (198606)
CA 1202072 A 19860318 (198616)
IL 67556 A 19871020 (198749)
EP 96723 B 19880810 (198832) EN
R: DE FR GB NL
DE 3278898 G 19880915 (198838)
IT 1155087 B 19870121 (198905)
KR 9003149 B 19900509 (199120)
DE 3249282 C 19920430 (199218) 20p
ADT EP 96723 A EP 1982-900470 19821228; GB 2122804 A GB 1982-20507 19821228; JP 59500033 W JP 1982-500581 19821228; DE 3249282 T DE 1982-3249282 19821228; DE 3249282 C DE 1982-3249282 19821228
PRAI US 1981-334508 19811228; US 1981-334509 19811228; US 1982-448585 19821215
REP EP 36118; FR 1526657; FR 94536; US 4182797; 3.Jnl.Ref; DE 2043477; EP 35715; US 4181779
IC C08G073-00; H01B001-12; H01M002-14; H01M004-60; H01M010-40
AB WO 8302368 A UPAB: 19930925
Battery comprises a case which incorporates a **cathode electrode**, an **anode electrode**, a separator separating the **cathode** and **anode** and an electrolyte, at least one of the **electrodes** comprising a **current collector** and a linear tractable electroactive polymer (I) which is capable of undergoing reversible oxidn., reVersible redn. or both to

form a linear charged polymer incorporating charge-compensating ionic dopants.

The (I) comprises diradical repeat units chosen from a heterocyclic ring system including at least one gp. 5B or gp. 6B atom, in which none of the ring C atoms are satd., a heterocyclic ring system including at least one gp. 5B or gp 6 B atom in which none of the ring C atoms are satd., and a connecting unit, and mixts. of these, the diradical repeat unit being in the form of a monomeric repeat unit which is capable of undergoing reversible oxidn., reversible redn. or both to form a stable ionic species and in which the connecting unit is a conjugated system or atom or gp. of atoms which maintain pi-orbital overlap with the heterocyclic ring system.

Use of tractable polymers as claimed allows construction of prim. and sec. batteries which are lightweight, and have high energy density, which can be operated under normal ambient conditions and do not contain highly toxic or spontaneously combustible materials, and which can be made in the form of a plurality of thin polymer **electrodes** sandwiched together in laminar form to allow the construction of batteries of non-traditional shape which can be accommodated into a space within a vehicle such as inside door panels, under bonnets and boots, inside seats, etc. B

FS CPI EPI
FA AB
MC CPI: A05-J02; A09-A03; A12-E06; L03-E01B; L03-E01C; L03-E03
EPI: X12-D01C; X16-E01

L33 ANSWER 47 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1983-147964 JAPIO
TI POSITIVE ELECTRODE FOR NONAQUEOUS ELECTROLYTE **BATTERY**
IN IKEDA KONOSUKE; UBUKAWA SATOSHI; NAKAIDO SHIGEHIRO; SO SHINJI
PA SANYO ELECTRIC CO LTD
PI JP 58147964 A 19830902 Showa
AI JP 1982-30890 (JP57030890 Showa) 19820226
PRAI JP 1982-30890 19820226
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
IC ICM **H01M004-62**
AB PURPOSE: To improve the contact between a positive electrode and electrolyte, and especially increase the electric-discharge characteristic at a high current density of the positive electrode by using a silicate- or phosphate-system heat- proof inorganic adhesive as a binding agent for the positive electrode.
CONSTITUTION: A positive electrode for a nonaqueous electrolyte **battery** is made by applying a paste, which contains a positive active material, a conductive agent and a binding agent used as main components, to a **current collecting** body before the **current collecting** body is coated with the paste is **molded**. In the positive **electrode**, the binding agent is a silicate- or phosphate-system heat-proof inorganic adhesive. The above silicate-system heat-proof inorganic adhesive is prepared by dissolving or dispersing an alkali-metal silicate or its derivative, colloidal silica, and a monomer or **polymer** of a silicate such as an alkyl silicate in water, and appropiately contains a hardener, a heat-proof pigment, a dispersion-stabilizing agent and the like. The above phosphate-system heat-proof inorganic adhesive is prepared by dissolving or dispersing an acid metal-phosphate, an acid salt, such as aluminum phosphate, magnesium phosphate or calcium phosphate in water, and appropriately contains a hardener, a heat-proof pigment, a dispersion-stabilizing agent and the like.

L33 ANSWER 48 OF 67 JAPIO COPYRIGHT 2002 JPO

AN 1983-066265 JAPIO
TI ALKALINE **BATTERY**
IN KOGA KENJI; YOSHIDA KAZUMASA
PA TOSHIBA BATTERY CO LTD
PI JP 58066265 A 19830420 Showa
AI JP 1981-164458 (JP56164458 Showa) 19811015
PRAI JP 1981-164458 19811015
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1983
IC ICM **H01M004-62**
AB PURPOSE: To increase work efficiency of mixing and **molding** of a **cathode** black mix and obtain an alkaline **battery** having excellent heavy load discharge performance at low temperature and good storage life at high temperature by mixing porous carbon black having high electrolyte holding capacity to graphite as a conductive mass, and adding crosslinked copolymer of isobutene and maleic anhydride, which has no reducing power to manganese dioxide and absorbes large amount of an electrolyte.
CONSTITUTION: Graphite and carbon black as a conductive mass are added to manganese dioxide active mass and they are stirred to make a mixture. A wetting solution prepared in such a way that for example, corsslinked **polymer** of isobutene and maleic anhydride is added to a potassium hydroxide electrolyte and they are mixed and stirred to make a gell like solution by swelling of **polymer**, is added to this mixture, then they are kneaded to make a **cathode** black mix. The **cathode** black mix is **press-molded** and filled to a **cathode** can 1 to make a **cathode** 2. A gelled **anode** mass is filled in the inside of the **cathode** black mix via a nonwoven fabric separator 3. A numerical 5 is a insurating gasket comprising synthetic resin, 6 is a sealing plate which also serves as an **anode** terminal, 7 is a **current collector**. The sealing plate 6 is tightly sealed by bending inward an opening 9 via the insulating gasket to construct a cylindrical alkaline **battery**.
COPYRIGHT: (C)1983,JPO&Japio

L33 ANSWER 49 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 1982-013669 JAPIO
TI ELECTRODE FOR **BATTERY** OR ELECTROLYSIS
IN FUJII TOSHINORI; HIROSE TAKASHI; HASHIMOTO TAKASHI
PA MEIDENSHA ELECTRIC MFG CO LTD
PI JP 57013669 A 19820123 Showa
AI JP 1980-86463 (JP55086463 Showa) 19800627
PRAI JP 1980-86463 19800627
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 1982
IC ICM **H01M004-86**
AB PURPOSE: To obtain a cheap electrode which has pliability and increased mechanical-shock resistance by adding a given amount of a conductive material such as carbon black to a thermoplastic, before th mixture is kneaded so as to make the electrode.
CONSTITUTION: An electrode 1 used for a secondary zinc-chlorine **battery** or alkali electrolysis is prepared by adding 20∼40wt% of a carbon powder such as carbon black to a thermoplastic such as vinyl chloride or polyethylene, before the mixture is well kneaded and is poured in a metal mold, being followed by subjecting the metal mold filled with the mixture to compression **molding**. Thus formed **electrode** 1, inside which a metal net 3 made of a stainless steel or the like is buried, is wrapped in a frame 2 made of the same material as the **plastic** used for making the electrode 1. By the means mentioned above, the electrode 1 with high mechanical-shock resistance can be obtained at a low cost. Besides, any breakdown of the electrode 1 can

be prevented with the frame 2, and the location of the metal net 3 increases the **current collecting** effect of the electrode 1.

L33 ANSWER 50 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1981:628086 HCAPLUS
DN 95:228086
TI Solid polymer electrolyte
IN White, Preston Samuel
PA PPG Industries, Inc. , USA
SO Fr. Demande, 27 pp.
CODEN: FRXXBL
DT Patent
LA French
IC C25B013-04; C25B001-26
CC 72-10 (Electrochemistry)
Section cross-reference(s): 49
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2475581	A1	19810814	FR 1981-2524	19810209
	NL 8100168	A	19810901	NL 1981-168	19810115
	SE 8100305	A	19810812	SE 1981-305	19810120
	NO 8100191	A	19810812	NO 1981-191	19810121
	DE 3104122	A1	19811126	DE 1981-3104122	19810206
	GB 2069006	A	19810819	GB 1981-3971	19810210
	JP 56127782	A2	19811006	JP 1981-18860	19810210
	BE 887464	A1	19810811	BE 1981-203758	19810211
	US 4369103	A	19830118	US 1981-293021	19810814
PRAI	US 1980-120247		19800211		
	US 1979-105055		19791219		

AB Cells were made with a crosslinked, permionic, carboxylic acid-contg. fluorocarbon resin (Q) diaphragm, contacted on both sides by **electrodes** with metal **current collectors**. The **cathode** was made by **molding** a powd. mixt. of 316 stainless steel, Fe or Ni in a carboxylic acid contg. thermoplastic, fluorocarbon, ion-exchange resin (X) binder to a Cu screen **current collector**. An **anode** was made by coating 1 side of the Q diaphragm with 0.25-mm thick layer of a powd. mixt. of 1 part graphite and 2 parts X binder, and **molding** it in place for 10 min at 200.degree. under 55 kg/cm2 **pressure**. A Pt-Sn-Ru coated Ti screen **current collector** was **pressed** against the **anode** coating. Alternately, the **anode** compn. could be **molded** on the Ti screen. The **cathode** was **pressed** against the other side of the diaphragm to make a cell. The cell is useful for prodn. of Cl and H from satd. brine.

ST carboxy fluoropolymer diaphragm electrolyzer brine; solid polymer electrolyte electrolyzer brine
IT Brines
(electrolysis of, carboxy group-contg. fluoropolymer diaphragm cell for)
IT Fluoropolymers
RL: USES (Uses)
(carboxy group-contg., diaphragm, for electrolytic cell for brine electrolysis)
IT Electrolytic cells
(diaphragm, with carboxy group-contg. electrolyte, for brine electrolysis)
IT 7439-89-6, uses and miscellaneous 7440-02-0, uses and miscellaneous

7782-42-5, uses and miscellaneous
RL: USES (Uses)
(**cathode**, with fluoropolymer binder, for diaphragm cell for brine electrolysis)
IT 11107-04-3
RL: PRP (Properties)
(**cathode**, with fluoropolymer binder, for diaphragm cell for brine electrolysis)
IT 7440-05-3, uses and miscellaneous 7440-06-4, uses and miscellaneous
7440-18-8, uses and miscellaneous 7440-31-5, uses and miscellaneous
RL: USES (Uses)
(**current collector** coating contg., on titanium, for **anode** for diaphragm cell for brine electrolysis)
IT 7440-32-6, uses and miscellaneous
RL: USES (Uses)
(**current collector**, metal-coated, on **anode**, for diaphragm cell for brine electrolysis)
IT 1310-73-2P, preparation 1333-74-0P, preparation 7782-50-5P, preparation
RL: PREP (Preparation)
(manuf. of, in brine electrolysis, carboxy-group contg. fluoropolymer diaphragm cell for)

L33 ANSWER 51 OF 67 NTIS COPYRIGHT 2002 NTIS DUPLICATE DUPLICATE 2
AN 1981(46):06085 NTIS Order Number: PB81-201964/XAB
TI Solid Polymer Electrolyte Water Electrolysis Technology Development for Large Scale Hydrogen Production (Design Phase). Annual rept.
AU Russell, J. H.
CS General Electric Co., Wilmington, MA. Direct Energy Conversion Programs. Sponsor: Gas Research Inst., Chicago, IL. (042708004)
NR PB81-201964/XAB; GRI-79/0102
28p; Nov 1980
NC Contract(s): GRI-5011-323-0143
DT Report
CY United States
LA English
AV Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A03/MF A01
OS GRA&I8118
AB The design for a water electrolysis module containing (14) cells each with 10 sq ft active area was completed. This included final drawings for: Membrane/**electrode** assembly, **Molded** carbon **current collector**, Fluid plates, Electrical bus plates, and Pneumatic end plates and boiling arrangements.
CC 99B Industrial chemistry and chemical process engineering
97K Fuels
CT *Hydrogen production; *Electrolytes; *Water; Electrolysis; Polymers; Equipment; Design criteria; Performance evaluation; Technology

L33 ANSWER 52 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1980:647411 HCAPLUS
DN 93:247411
TI Organic electrolyte battery
PA Matsushita Electric Industrial Co., Ltd., Japan
SO Jpn. Tokkyo Koho, 4 pp.
CODEN: JAXXAD
DT Patent

LA Japanese
IC H01M006-16; H01M004-06; H01M004-64; H01M006-14
CC 72-2 (Electrochemistry)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 55025472	B4	19800705	JP 1976-84300	19760714

AB An org. electrolyte battery is manufd. by **pressing** a **molded** org. electrolyte-impregnated **cathode** against the bottom of a battery case provided with irregularities, then attaching the separator and **anode**. Optionally, the irregular bottom can be replaced with an electrolyte-resistant wire mesh, expanded metal, etc., serving as **current collector**.
ST org electrolyte battery
IT Batteries, primary
(nonaq.)

L33 ANSWER 53 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1980-51552C [29] WPIX
TI Electrolysis cell having ion permeable membrane - with **current collector** having ribs to define flow channels, has inlet restriction to prevent reverse flow.
DC E36 J03
IN LAWRANCE, R J; RUSSELL, J H
PA (GENE) GENERAL ELECTRIC CO
CYC 6

PI	US 4210512	A	19800701	(198029)*
	DE 3000313	A	19800724	(198031)
	GB 2038875	A	19800730	(198031)
	FR 2445862	A	19800905	(198043)
	GB 2038875	B	19830112	(198302)
	IT 1130185	B	19860611	(198746)
	JP 55113886	A	19800902	(198911)
	JP 01010597	B	19890222	(198911)
PRAI	US 1979-1879		19790108	

IC C25B001-10; C25B009-04; C25B011-20; C25B015-08; C25C000-00; H01B001-04
AB US 4210512 A UPAB: 19930902
Electrolysis cell partic. for water, of the type described in 4039409 has an ion permeable, liq. impervious membrane separating the cell into **anode** and **cathode** compartments. **Anode** and **cathode electrodes** are **bonded** to opposite sides of the membrane and a **moulded** graphite **current collector** (10) has a series of ribs (12) contacting the **anode**, the ribs forming fluid distribution channels (13). The inlet to each channel includes a restriction (32) to provide a **pressure** drop which is larger than the **pressure** variations that occur downstream of the inlet.
The restriction prevents the transportation of evolved gas towards the inlet manifold and the consequential blocking of the channels.
FS CPI
FA AB
MC CPI: E31-A; E31-D; J03-B02

L33 ANSWER 54 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1979-64105B [35] WPIX
TI Alkaline storage battery zinc **anode** - formed by depositing bismuth film on silver, copper or brass **current collector, press moulding** zinc powder onto film.
DC L03 X16

PA (TOKE) TOKYO SHIBAURA ELECTRIC CO
CYC 1
PI JP 54021929 B 19790803 (197935)*
JP 50080446 A 19750630 (197935)
PRAI JP 1973-130953 19731121
IC H01M004-66
AB JP 79021929 B UPAB: 19930901
The battery **anode** consists of a zinc **electrode** fabricated by depositing a metal film of Bi on a metal **current collector** of Ag, Cu or brass, and **press-moulding** an active material powder consisting mainly of Zn, on the Bi metal film on the **current collector**.
FS CPI EPI
FA AB
MC CPI: L03-E01B

L33 ANSWER 55 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1979-47697B [26] WPIX
TI Solid electrolyte battery - having a lithium, sodium or silver tungstate **anode** which changes colour when emf is reduced.
DC E13 L03 X16
PA (NIST) JAPAN STORAGE BATTERY CO LTD
CYC 1
PI JP 54060425 A 19790515 (197926)*
PRAI JP 1977-127154 19771021
IC H01M004-58
AB JP 54060425 A UPAB: 19930901
The battery has an **anode** of MxWO3 (where x is a positive number and M is Li, Na or Ag). When the capacity of the battery is reduced by discharge, the colour of the **anode** changes. It is thus possible to display the end of the life of the battery.
In an example, **cathode** comprises a mixt. consisting of 60 wt.% I2 and 40 wt.% phenothiazine. The solid electrolyte consists of RbAg4I5. The **anode** consists of Ag0.1 WO3. 50 mg of the **cathode**, 500 mg of the solid electrolyte 4 and 500 mg of the **anode** are stacked and **press.- moulded** into a disc. A **cathode current collector** of Au is formed on the **cathode**. A **cathode** lead is **bonded** to the **cathode current collector**. An **anode current collector** of SnO2 as a transparent **electrode** is formed on the **anode**. An **anode** lead is inserted into the **anode**.
FS CPI EPI
FA AB
MC CPI: E35-B; E35-Q; L03-E01B

L33 ANSWER 56 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1977:591231 HCAPLUS
DN 87:191231
TI Gas diffusion **electrode**
IN Izawa, Kiyoshi; Aramaki, Isao
PA Shin-Kobe Electric Machinery Co., Ltd., Japan
SO Japan. Kokai, 2 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC C25B011-00
CC 72-7 (Electrochemistry)
Section cross-reference(s): 76

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 52066876	A2	19770602	JP 1975-142708	19751129
	JP 57045315	B4	19820927		

AB A gas-diffusion **electrode** is prepd. by pasting a water-repellent film on the powder layer of a **molded electrode** paste, bending (bowing) the **molded electrode**, then heat treating. By avoiding the application of **pressure** required in conventional processes, a drop in gas permeability of the water-repellent film, which leads to increased polarization in the high c.d. region and thus lowering of the **electrode** characteristics, is prevented. Thus, a Ni mesh (**current collector**) was coated with a paste obtained from a catalyst, powd. C, powd. graphite, and a water-repellent binder (a C2F4 polymer dispersion), the coated grid was **pressed** (1.0 ton/cm2) into the shape of an **electrode**, the paste layer was coated with a C2F4-C3F6 copolymer dispersion (adhesive), and a water-repellent layer was applied over the adhesive layer. The Ni mesh was bowed with the coated surface to the outside, the Ni mesh was clamped on a metal tube then heated for 30-90 min at 200-300.degree. to effect good adherence between the **electrode** material and the water-repellent film. The metal tube was then removed to give a gas-diffusion **electrode**.

ST **electrode** gas diffusion catalytic; nickel carbon graphite **electrode** catalytic

IT **Electrodes**
(gas-diffusion catalytic, nickel mesh with carbon-graphite coating)

IT 7440-02-0, uses and miscellaneous
RL: USES (Uses)
(**electrodes**, gas-diffusion, carbon-graphite coatings on)

IT 7440-44-0, uses and miscellaneous 7782-42-5, uses and miscellaneous
RL: USES (Uses)
(**electrodes**, gas-diffusion, coated on nickel mesh)

L33 ANSWER 57 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1978-01549A [01] WPIX
TI Concrete parts damp heat treatment **mould** - ensures process automation and has corona discharge **electrodes** in holes of cover.
DC L02 P64
PA (SOYU-R) SOYUZVODPROEKT PROD
CYC 1
PI SU 549449 A 19770520 (197801)*
PRAI SU 1975-2173848 19750918
IC B28B007-24; C04B041-30
AB SU 549449 A UPAB: 19930901
The control system of heat or damp heat treatment of reinforced concrete parts determines the rate of setting using a corona discharge assembly. The latter comprises discharge **electrodes** set in holes of the **mould** cover, and a **collecting electrode** in the form of a grid attached to the bottom of the cover via a dielectric packing.

The concrete poured into the space bounded by the bottom and sides of the **mould** is overlaid with the grid **electrode**, and the latter is covered with the dielectric packing beneath the cover. The discharge **electrodes** of the cover are connected to a terminal of the h.v. source while the other terminal is connected to the **mould** bottom, cover and to the grid via a controller. The discharges between the two types of **electrodes** have an intensity which depends on the temp. and humidity of air in the inter **electrode** gap, as

well as on the degree of concrete mass crystallization. The **current** of the **collecting electrodes** passes through the controller which switches on or off the electric heaters of the **mould**.

FS CPI GMPI
FA AB
MC CPI: L02-D04

L33 ANSWER 58 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1976:76810 HCAPLUS
DN 84:76810
TI Metal-air cells and air **cathodes** for use in them
IN Buzzelli, Edward S.
PA Westinghouse Electric Corp., USA
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
IC H01M
NCL 136086000A
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3925100	A	19751209	US 1974-446088	19740226
	GB 1499021	A	19780125	GB 1975-6615	19750217
	DE 2507774	A1	19760205	DE 1975-2507774	19750222
	FR 2262414	A1	19750919	FR 1975-5867	19750225
	FR 2262414	B1	19810306		
	BE 825972	A1	19750826	BE 1975-153729	19750226
	SE 7502176	A	19750827	SE 1975-2176	19750226
	SE 408608	C	19790927		
	SE 408608	B	19790618		
	JP 50119245	A2	19750918	JP 1975-22970	19750226
	JP 57032465	B4	19820710		
PRAI	US 1974-446088		19740226		

AB The air **electrode** includes a hydrophilic layer which comprises a **current collector** of metal fibers and a hydrophilic compn. contg. electrochem. active materials into which the **current collector** is **pressed** or **molded**, and a hydrophobic layer laminated to the **molded** hydrophilic layer. The hydrophilic compn. includes a high surface area C [7440-44-0], preferably a Ag [7440-22-4]-Hg [7439-97-6] catalyst, a wet-proofing agent such as poly(tetrafluoroethylene) [9002-84-0], and MnO2. The components are mixed together in powder form to which deionized H2O is added to form a paste-like consistency. The fiber metal mesh **current collector**, preferably Ni [7440-02-0] or Ni-plated steel, is then integrated within the compn. and **press molded** into the hydrophilic layer. To this **molded** composite layer is laminated a hydrophobic layer of porous, fibrillated, unsintered poly(tetrafluoroethylene) having a total porosity 35-60 vol.% and a thickness 0.005-0.20 in. The hydrophobic layer permits rapid diffusion of gas, such as O and air, but prohibits the passage of alkali hydroxide electrolytes. The **electrodes** operate for >4000 hr. They have a performance level of 50-200 mV better than other known useful air **electrodes** systems at 50 mA/cm2.

ST air metal battery **cathode**
IT **Cathodes**
(battery, air-metal catalytic)
IT 7439-97-6, uses and miscellaneous 7440-22-4, uses and miscellaneous

RL: CAT (Catalyst use); USES (Uses)
(catalyst, air-metal battery)
IT 7440-02-0, uses and miscellaneous
RL: USES (Uses)
(**cathode current collector** from, air-metal battery)
IT 7440-44-0, uses and miscellaneous 9002-84-0
RL: USES (Uses)
(**cathodes** contg., air-metal battery)

L33 ANSWER 59 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1976:423548 HCAPLUS
DN 85:23548
TI **Electrodes** for batteries
IN Gadessaud, Robert; Audry, Claudette
PA Compagnie Generale d'Electricite, Fr.
SO Ger. Offen., 19 pp.
CODEN: GWXXBX
DT Patent
LA German
IC H01M
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2513431	A1	19751002	DE 1975-2513431	19750326
	FR 2266316	A2	19751024	FR 1974-10902	19740328
	FR 2266316	B2	19790525		
	FR 2266319	A2	19751024	FR 1974-10903	19740328
	BE 826207	A1	19750903	BE 1975-1006495	19750303
	US 3967976	A	19760706	US 1975-561501	19750324
	DK 7501324	A	19750929	DK 1975-1324	19750326
	DK 137737	C	19781002		
	NL 7503650	A	19750930	NL 1975-3650	19750326
	GB 1489277	A	19771019	GB 1975-12724	19750326
	SE 7503637	A	19751215	SE 1975-3637	19750327
	SE 408607	C	19790927		
	SE 408607	B	19790618		
	JP 50129927	A2	19751014	JP 1975-37048	19750328
	SE 7809991	A	19780922	SE 1978-9991	19780922
PRAI	FR 1974-10902		19740328		
	FR 1974-10903		19740328		

AB In manufg. of battery **electrodes** with improved mech. and elec. properties, a **current collector** of an, e.g., Ag-plated Ni foil or grid is coated with vertical strips of a H2O-repellent polymer, e.g., poly(tetrafluoroethylene) or poly(dichlorodifluoroethylene). The coated **collector** is set into a **mold** into which an **electrode** active material is cast. After solidification at .apprx.-20.degree. and chem. conversion treatment, the **electrode** is washed with H2O, dried, **pressed**, and coated with a thin polymer layer. Gases formed in **electrodes** during the battery operation can escape through free spaces formed between low-adherent active-material paste and polymer strips.
ST battery secondary **electrode**
IT **Electrodes**
(battery, with high mech. and elec. properties)

L33 ANSWER 60 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1974:508469 HCAPLUS
DN 81:108469

TI Lithium-metal molybdate organic electrolyte cell
IN Dey, Arabinda N.; Holmes, Robert W.
PA Mallory, P. R., and Co., Inc.
SO U.S., 4 pp. Continuation-in-part of U.S. 3,711,334 (CA 78;79027f)
CODEN: USXXAM
DT Patent
LA English
IC H01M
NCL 136083000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3822148	A	19740702	US 1972-254332	19720515
	US 3711334	A	19730116	US 1970-54931	19700715
PRAI	US 1970-54931		19700715		

AB Continuation-in-part of U.S. 3,711,334 (CA 78;79027f). An elec. cell is described which is comprised of pos. **electrodes** from any of the molybdates of Ag, Fe, CO, Ni, Hg, Tl, Pb, Bi, and their mixts. and neg. **electrodes** of any of the light metals, such as Li. The **cathodes** are fabricated from a mixt. of premixed and preslugged powd. depolarizer and graphite in a 7:3 wt. ratio with 3 parts by wt. of a binder, an aq. soln. of poly(tetrafluoroethylene). The water is displaced by adding a sufficient amt. of org. solvent to form a paste. The paste is then thoroughly mixed to form an easily pliable dough and any excess solvent is decanted. The **cathodes** are **moulded** on and around a Ni **current collector**, fabricated from metal screening or expanded metal by placing layers of the dough, above and below the **current collector** which, in turn, is placed in a rectangular die. The dough is **pressed** at 70,000-80,000 psi. The excess solvent such as iso-PrOH is squeezed out of the dough and there results a compact rectangular **cathode** with adequate mech. integrity for further treatment. This **cathode** is then dried in air and cured at 200-350.degree. for 1.5-3 hr. Although the curing process enhances the mech. integrity of the **cathode** even further, these **cathodes** can be used without curing as well. Elec. cond. of such a **cathode** is more than adequate for its purpose. The ratio of active material to graphite or other conductive inert additive and the ratio of the total mix to binder can be varied widely.

ST lithium metal molybdate battery
IT **Cathodes**
(battery, molybdate)
IT Batteries, primary
(lithium-molybdate)
IT 10190-55-3 13595-85-2 13762-14-6 13765-74-7 14177-55-0
RL: USES (Uses)
(**cathodes**, battery)

L33 ANSWER 61 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1973:460876 HCAPLUS
DN 79:60876
TI Semiconducting **cathode** for storage batteries
PA Molecular Energy Corp.
SO Fr. Demande, 8 pp.
CODEN: FRXXBL
DT Patent
LA French
IC H01M
CC 77-2 (Electrochemistry)

Section cross-reference(s): 71

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	FR 2146169	A1	19730302	FR 1971-26883	19710722
	FR 2146169	A3	19730302		
	FR 2146169	B3	19740405		

AB One part by weight of a semiconducting sulfide coating, per 4 to 50 parts of metal halide or oxide granules 0.15 to 0.3 mm diam., was formed on the granules by treating them with (NH4)2S or alkali metal sulfide in a soln. or a fluidized bed. The coated particles were **molded** into **cathodes**. For example, a soln. of 50 g Na2S in 1.5 l. MeOH was added slowly to a stirred suspension of 500 g CuF2 in 1 l. MeOH to form a CuS coating on the granules. The coated granules were rinsed free of Na2S, dried, coated with 3% poly(vinyl chloride) and **molded** on a screen **current collector** for several min at 150.degree. to make a strong **cathode**. A cell contg. this **cathode** and a Mg **anode** had a c.d. of 0.8 A/cm2. Other high energy d. **cathodes** were made of AgCl, NiF2, and PbO2 granules.

ST semiconducting **cathode** storage battery; sulfide coating **cathode** storage battery; PVC sulfide **cathode** storage battery; magnesium sulfide battery

IT **Cathodes**
(battery, semiconducting-sulfide, coatings formed in situ on halide or oxide granules in)

IT Batteries, secondary
(magnesium-copper sulfide, coatings formed in situ on halide or oxide granules in)

IT 7439-95-4, uses and miscellaneous
RL: USES (Uses)
(**anodes**, battery, with semiconducting sulfide **cathode**, coatings formed in situ on halide or oxide granules in)

IT 1314-87-0 1317-40-4 11113-75-0 21548-73-2
RL: PRP (Properties)
(**cathodes**, battery, semiconducting, coatings formed in situ on halide or oxide granules in)

L33 ANSWER 62 OF 67 HCAPLUS COPYRIGHT 2002 ACS
AN 1968:65211 HCAPLUS
DN 68:65211
TI Silver **electrodes** for electric batteries
IN Strauss, Howard J.
PA Clevite Corp.
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
NCL 136120000
CC 77 (Electrochemistry)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 3359138		19671219	US	19650107

AB Ag **electrodes** having high porosity, high d., and fine, uniform pores can be mass produced by either pouring molten AgCl into a **mold** over **current collector** or grid or by rolling solidified AgCl slabs into sheets and **pressing** the **current collectors** into the sheet or between 2 sheets at 400-50.degree.F. The structure is coated with Ag by redn. with

hydroxylamine or other photographic developers for .apprx.1 min. and rendered free of Cl- by cathodic redn. Thus, Ag wire collector was embedded in solidified fused AgCl sheet (17/8 .times. 21/4 .times. 0.03 in.) at 400.degree.F. and a force of 6 tons. After degreasing with perchloroethylene, the surface of the sheet was reduced with Kodak Dektol and electrolyzed with Mg as a pos. **electrode** and 5% KOH electrolyte at 20 amp./in.2 The mech. strong, very porous **electrode** contained 8.6 g. Ag, was an av. of 0.0279 in. thick, had d. of 5.16 g./cc. and capacity 2.14 amp. hrs. as compared to 6.46, 0.0291, 3.69, and 1.61, resp., for **electrodes** manufd. from Ag oxide paste.

ST BATTERIES AG **ELECTRODES**; POROUS AG **ELECTRODES** BATTERIES; SILVER **ELECTRODES** BATTERIES

IT **Electrodes**
(battery, silver, by redn. of silver halide with photographic developer)

L33 ANSWER 63 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 2002-025547 JAPIO
TI ELECTRODE FOR ALKALINE SECONDARY **BATTERY**
IN MATSUMOTO KOICHI
PA ASAHI KASEI CORP
PI JP 2002025547 A 20020125 Heisei
AI JP 2000-210134 (JP2000210134 Heisei) 20000711
PRAI JP 2000-210134 20000711
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2002
IC ICM **H01M004-24**
ICS **H01M004-26**; **H01M004-32**; **H01M004-62**; **H01M004-70**
AB PROBLEM TO BE SOLVED: To aim at improving adhesion of an electrode active substance and a **current collector** substrate, and aim at improving electrochemical durability.
SOLUTION: By using a **polymer** having a chemical **bonding** property to the **electrode** active substance and having an ionic conductivity as a binder in a paste electrode of an alkaline secondary **battery**, the adhesion between the electrode active substance and the **current collector** metal plate can be improved, and a thin of electrode and an improvement of **battery** characteristic can be realized. Especially when perfluorocarbon **polymer** having sulfonic acid group is used as a binder for the positive electrode, the positive electrode is superior in the oxidation resistance which is especially required for the positive electrode, and appropriate.
COPYRIGHT: (C)2002,JPO

L33 ANSWER 64 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 2001-118565 JAPIO
TI ELECTRODE-FORMING BODY, METHOD FOR MANUFACTURING AND SECONDARY **BATTERY** USING THE SAME
IN FUJIWARA MASAKI; NAKAGAWA YUJI; KUROSAKI MASAHITO; KANEKO SHINAKO; HARADA MANABU; NISHIYAMA TOSHIHIKO
PA NEC CORP
PI JP 2001118565 A 20010427 Heisei
AI JP 1999-292537 (JP11292537 Heisei) 19991014
PRAI JP 1999-292537 19991014
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2001
IC ICM **H01M004-02**
ICS **H01M004-04**; H01M010-40
AB PROBLEM TO BE SOLVED: To provide a secondary **battery**, having large energy and power density and high flexibility on planning of the **battery** due to using high-molecular active materials.

SOLUTION: An electrode-forming body is manufactured by heat-**pressing electrode** materials mixed high-molecular active materials, a conducting auxiliary agent and a **plasticizer** together with at least one **current collecting** body.
COPYRIGHT: (C)2001,JPO

L33 ANSWER 65 OF 67 JAPIO COPYRIGHT 2002 JPO
AN 2000-012085 JAPIO
TI MANUFACTURE OF LITHIUM ION **POLYMER** TYPE SECONDARY **BATTERY**
IN NAKAJIMA AKASHI
PA JAPAN ENERGY CORP
PI JP 2000012085 A 20000114 Heisei
AI JP 1998-193632 (JP10193632 Heisei) 19980625
PRAI JP 1998-193632 19980625
SO PATENT ABSTRACTS OF JAPAN (CD-ROM), Unexamined Applications, Vol. 2000
IC ICM H01M010-40
ICS **H01M004-02**; H01M010-04
AB PROBLEM TO BE SOLVED: To provide a manufacturing method capable of improving the productivity and assembling precision of a lithium ion **polymer** secondary **battery** and conformable to the mass production thereof.
SOLUTION: A positive electrode material, a negative electrode material and a separator are applied to carrier materials 1, respectively, the resulting carrier materials are cut in a prescribed width, a **current collector** is put between them to laminate both sides of the **current collector** with the cut positive electrode and negative electrode films, whereby a positive electrode film and a negative electrode film are formed. The separator film is stuck to both sides of the laminated negative electrode film to form a negative electrode film with a separator 8. The **current collecting** mesh parts of the positive electrode film and the negative electrode film with separator 8 are punched into a prescribed form by the use of a metal **mold**, only the positive **electrode** film on the carrier material is half-cut by use of a metal mold, and the half-cut positive electrode film 6 is transferred to both sides of the negative electrode film with the separator 8 at fixed intervals to laminate it. The transferred and laminated assembly is punched into individual **batteries** by the use of a metal mold.
COPYRIGHT: (C)2000,JPO

L33 ANSWER 66 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1971-41428S [24] WPIX
TI Catalytically active **electrodes** for fuel - cells batteries.
DC A15 A85 L03 X16
PA (GENE) GENERAL ELECTRIC CO
CYC 1
PI US 3583886 A (197124)*
PRAI US 1964-411693 19641117
IC H01M013-08
AB US 3583886 A UPAB: 19930831
Catalytic **electrode** is formed from a **moulding** comp. constg. of a noble metal powder having an average particle size < 250 Angstroms and 0.5-50% by wt. of a thermoplastic binder having a particle size of <50 mu and a critical surface tension <32 dynes/cm. The comp. is **moulded** into a billet under a **pressure** of 1800-3000 psi and at a temp. of 350 degrees - 750 degrees F. The billet is sliced into thin sheets (thickness 0.1-1.0 mil) and united to one or more **current collectors**. The noble metal is platinum black and thermoplastic binder is PTFE.

FS CPI EPI
FA AB
MC CPI: A04-E08; A12-E06; L03-E04B

L33 ANSWER 67 OF 67 WPIX (C) 2002 THOMSON DERWENT
AN 1972-76137T [48] WPIX
TI **Pressed**-powder **electrodes** - binder free by high **pressure moulding** of mixt of active material coated with porous carbon and den.
DC L03 P78 X16
PA (GATE) GATES RUBBER CO
CYC 4
PI DE 2223149 A (197248)*
US 3817789 A 19740618 (197426)
GB 1375462 A 19741127 (197448)
DE 2223149 B 19750515 (197521)
CA 979484 A 19751209 (197552)
PRAI US 1971-143058 19710513
IC B44D001-18; H01M004-30; H01M035-18; H01M043-00
AB DE 2223149 A UPAB: 19930831
The **electrodes** are produced by **pressing** a mixt. of (1) active material, coated with conductive carbon material (2) and (3) conductive material with dendritic structure onto a **current collector** at **pressures** of 35.15 x 106 kg/cm. The technique is esp. for Ni **electrodes** for Ni-Cd and Ni-Zn batteries. The cells have high overall capacity and the **electrodes** are flexible. (1) is Mn, Pb, Ag or Hg (II) oxide or Cd or its oxide or esp. Ni-oxygen cpd and (2) is pref graphite. (3) is powdered Fe or Ni carbonyl, graphite fibres, electrolyte Fe or Ni, Ta or W.
FS CPI EPI GMPI
FA AB
MC CPI: L03-E01B